

**An Investigative study to Explore Teachers` Attitude
Towards the Inclusion of Learners on the Autism
Spectrum Disorder and Learners with Meares Irlen
Syndrome in Private Schools in the UAE**

دراسة استقصائية لاستكشاف موقف المعلمين من دمج متعلمين على
طيف التوحد و متعلمين لديهم متلازمة آيرلين في المدارس الخاصة في
الإمارات العربية المتحدة

by

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Abstract

The fundamental purpose of this research paper was to investigate teachers' attitude towards the inclusion of students with Autism and Meares Irlen Syndrome in four private schools in the UAE through studying their understanding of the main features, characteristics and classroom arrangements for each case. It also explored teachers' readiness to include students with these two cases in regular classes in addition to identifying some preconceived ideas about both cases. The research adopted a mixed method approach. It utilized three research tools. The first one was an online survey that was designed for the purpose of this research, reflective responses written by teachers of students with Autism and MIS to explore their views of their teaching experience, and the third tool was a group of semi-structured interviews with staff members in special education department to explore the support these departments offer to the teachers of ASD and MIS students to achieve a successful inclusion. A total number of 117 teachers took part in the online survey and 13 teachers reflected on their teaching experience of students with Autism and MIS in addition to four interviews. Over all, the online survey revealed that the publicity of Autism over MIS increased teachers' awareness of ASD than MIS and raised the number of teachers who had a training in Autism than those who had a training in MIS, however, the data also illustrated that teachers are still in need of formal trainings to improve their self-efficacy. The data illustrated that there is a significant difference between teachers' prior knowledge of MIS and their awareness of its characteristics from one side and between their previous teaching experience from the other side. Further, teachers'

training and previous experience influenced their readiness to teach an ASD student and teachers' ignorance of MIS made some of them believe that the inclusion of MIS students is harder than ASD. As for the reflective questions, the majority of participants were positive to the concept of inclusion, however, they called for additional support and training that would enhance the implementation of inclusive education. Finally, the support offered by the special education departments need to meet teachers' expectations.

ص خلم

الهدف الأساسي من هذه الورقة البحثية هو استكشاف مواقف المعلمين من دمج المتعلمين من هم على طيف التوحد و المتعلمين الذين لديهم متلازمة آيرلين في أربع مدارس خاصة في الإمارات العربية المتحدة من خلال دراسة فهمهم للسمات الرئيسية والخصائص المتعلقة بكل حالة واستراتيجيات التدخل الصفية. كما استكشف أيضاً استعداد المعلمين لدمج طلاب التوحد و متلازمة آيرلين في الفصول العادية بالإضافة إلى بعض الأفكار المسبقة حول الحالتين. اعتمد البحث طريقة مختلطة. استخدمت ثلاث أدوات بحثية. الأولى عبارة عن استطلاع عبر الإنترنت تم تصميمه لغرض هذا البحث، وتغذية راجعة كتبها مدرسي الطلاب الذين لديهم توحد أو متلازمة آيرلين لاستكشاف وجهات نظرهم حول تجربتهم الشخصية في تدريس هؤلاء المتعلمين، وكانت الأداة الثالثة عبارة عن مجموعة من المقابلات شبه المنظمة مع مجموعة من الموظفين في قسم التعليم الخاص لاستكشاف الدعم الذي تقدمه هذه الأقسام للمعلمين والطلاب لتحقيق الدمج الناجح.

شارك ما مجموعه 117 مدرساً في الاستبيان عبر الإنترنت و13 مدرساً كتبوا عن تجربتهم في تدريس طلاب التوحد و طلاب متلازمة آيرلين بالإضافة إلى أربع مقابلات. كشفت الدراسة الاستقصائية على الإنترنت أن شهرة التوحد مقابل متلازمة آيرلين زادت وعي المعلمين بالتوحد على حساب متلازمة آيرلين وأدت إلى زيادة عدد المعلمين الذين تلقوا التدريب في التوحد من أولئك الذين تلقوا التدريب في متلازمة آيرلين ، ومع ذلك، فإن البيانات أظهرت أيضاً أن المعلمون مازالوا بحاجة إلى تدريبات رسمية لتحسين فعاليتهم الذاتية. توضح البيانات أن هناك فرقاً كبيراً بين معرفة المعلمين السابقة بمتلازمة آيرلين ووعيهم بخصائصها من جانب وبين خبراتهم التعليمية السابقة من الجانب الآخر. علاوة على ذلك، أثر تدريب المعلمين والخبرات السابقة على استعدادهم لتدريس طلاب التوحد كما أدى جهل المعلمين بمتلازمة آيرلين للاعتقاد بأن دمج طلاب هذه المتلازمة أصعب من دمج طلاب التوحد. أما بالنسبة للأسئلة التأملية، فقد كانت مواقف غالبية المشاركين إيجابية لمفهوم الدمج، ولكنهم دعوا إلى دعم إضافي وتدريب من شأنه أن يعزز الدمج. أخيراً، يحتاج الدعم المقدم من إدارات التعليم الخاص إلى تلبية توقعات المعلمين

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List of Abbreviations

Abbreviation	Description
VS	Visual Stress
MIS	Meares Irlen Syndrome
CFS	Chronic Fatigue Syndrome
MOE	Ministry of Education
KHDA	Knowledge and Human Development Authority.
ASD	Autism Spectrum Disorder
WRRT	Wilkins Rate of Reading Test
EPI	Eysenck Personality Inventory

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1. Chapter One: Introduction

Inclusive education is a tool for a future democratic and equitable society that welcomes diversity (Porter 2008). It became a leading approach in many countries in an attempt to preserve the rights of all students to better education. “In an ideal world, school is a place where every student feels comfortable and learns at a suitable pace. Inclusive teachers value diversity and foster the development of caring, respectful learning communities. In inclusive environments that support diversity, teachers must provide individualized support to students with unique learning needs” (Dare & Nowicki 2018. p 243). Despite the multiple international regulations and conventions to explain and regulate this movement, there is a disagreement on a unified definition that is widely accepted to interpret inclusive education, and all the endeavors to agree on a definite functional interpretation is difficult to achieve (Reindal 2015). Whether there is a clear working definition of inclusive education or not it is important to endorse the core meaning of it and understand that it is the individuals` social and civil right to be educated in regular classes and fully participate in the community irrespective to their differences. “It is vital to see inclusive education not just as a social and structural matter about how various aspects of a school are organized to meet diverse children`s needs in terms of personnel, pedagogical methods, materials, cultural structures, but also to see inclusive education as an ethical issue” (Reindal 2015. p1). To enable effective mainstreaming, schools have to welcome all students with their vast needs and provide them with equal chances to participate in the schools` academic and social activities without discrimination or labelling. It is important to empower

teachers as they are the key players in this process by preparing, supporting, and training them to teach more inclusively to achieve the anticipated goals of inclusion. The positive effect of inclusion in schools will eventually be extended to the community. Inclusive education prepares students to take part in their community when they grow up because they learn how to interact with others compared to students who have been educated in segregated settings (Porter 2008). Thus, efforts need to be directed to identify and eliminate obstacles that hinder authentic inclusion.

1.1 Background and Motivation

A global campaign towards mainstreaming started with the Salamanca World Conference on Special Needs. The Salamanca statement sets the target of inclusive education. It depicted inclusion as a whole process towards involving students with exceptional needs in mainstream schools and community and in order to achieve that changes in the teaching strategies, curriculum have to occur (UNESCO, 1994). Prior to that, the Convention on the Rights of the Child stressed that all children must have equal rights to access education in a way that serves their wellbeing (CRC 1989). These international conventions paved the way to a worldwide movement towards inclusion. Nations across the globe issued their own regulations in the light of international conventions. However, many challenges emerged due to this change especially for developing nations that experience a gap between policies and practice (Kaur, Noman & Awang-Hashim 2015). " It is a challenging goal that will take a significant

investment in leadership at all levels – at the policy level; the education system level; and the school and classroom levels" Porter (2008. p4).

Since the adoption of the Convention on the Rights of People with Disabilities, The United Arab Emirates put in place a group of legislative and administrative measures that conform with it such as the Federal Law No. 29 of 2006 on the Rights of People with Special Needs, followed by Law No. 2 of 2014 to protect the rights of people of determination in the emirate of Dubai, and School for All initiative by the Ministry of Education to ensure that people with determination have equal opportunities to live with dignity and be fully included in their communities and that students with special education needs learn alongside typically developing students. These policies stimulated the implementation of inclusion across the country which is further ahead than it was several years ago. Public and private schools took part in this innovation; however, their efforts and accomplishments might not be consistent. Due to this , there are concerns that there might be students in classrooms who are left behind. The failure or success of inclusive education can be attributed to several reasons one of which is teachers` attitude and efficacy. Kaur, Noman & Awang-Hashim (2015) opined that teachers` positive attitude towards inclusion is a centerpiece to a successful accommodation of students with exceptional needs in regular classes even without prior training or limited resources and the school`s role is to foster positive social values between teachers that will nurture a positive attitude towards inclusion and to purvey physical facilities. Porter (2008) pointed that the shift to inclusive education in Canada was not easy because of educator`s ignorance of the meaning of inclusive education

and the strategies that can be used to best reach the needs of all their students which lead to the public believe that the presence of students with special needs who are unable to learn in regular classes will negatively affect the academic performance of other students. Thus, teachers` role is critical and their positive attitude is crucial to the success of this innovation (de Boer, Pijl & Minnaert 2011).

My long journey in different private schools in UAE as a teacher has influenced this research paper, especially that I have witnessed the shift towards inclusion in its early stages. In my job, I interact with individuals who implement the inclusion process or benefit from it. I work with a wide spectrum of students who have vast abilities and needs as well as their parents. I intercommunicate with teachers, hear and live their stories and experiences in teaching students with special needs. Besides, I worked with different schools` management that had their special ways to establish an inclusive environment in their schools to comply with the regulations from one side and to fulfill the expectations of the main educational bodies such as MOE and KHDA from the other side.

My main purpose to carry out this research was to investigate the impact of teachers` awareness and self-efficacy on their attitude towards inclusion with a focus on two disorders, Autism and Meares Irlen Syndrome. The reason to choose these two cases is that Autism is becoming one of the most common cases that are included in mainstream schools, and the attention and services of this the disorder is also increasing (Elsabbagh et al. 2012), while MIS is a syndrome that is not well recognized or understood regardless of its high prevalence (Heine, Martin & Shields 2016).

1.2 Research Objective

The main purpose of this research is to explore in-service teachers` attitude towards the inclusion of two disorders that can cause learning difficulties, Autism Spectrum Disorder and Meares Irlen Syndrome in four private schools in the emirates of Dubai and Sharjah through examining teachers` understanding of the main features and characteristics, their readiness and awareness of some intervention strategies, and misconceptions in regard to these two cases. It also aims to identify barriers that hinder teachers from teaching inclusively from their own perspective.

1.3 Research Questions

This paper aims to answer the following questions:

- 1- What attitudes do teachers hold regarding the inclusion of students diagnosed with Autism and MIS in UAE?
- 2- Are there any differences in teachers` awareness and readiness to teach students with Autism and MIS?
- 3- What role does special education departments play to support the inclusion of students with autism and MIS in regular classes?

1.4 Significance of the research

This research is significant because it does not study teachers' views towards inclusion as a general concept. It rather studies their attitude through examining their own evaluation of their self-efficacy and knowledge of Autism a well-known disorder and MIS a widely neglected disorder (Wilkins, Huang & Cao 2004). Further, it is the first paper in the country that addresses the inclusion of MIS students. It also allowed teachers to reflect on their own experience in teaching ASD and MIS students and weigh the impact of this experience on their attitude. Moreover, the survey included many important items, however, in my opinion, it asked teachers 2 explicit and direct forward questions which would reveal their true position to inclusion, the first question asked teachers if they can teach a student with ASD or MIS and the second one asked them if they are willing to teach a student with one of these cases. The findings of this study would uncover teachers' attitude towards inclusion. It will help in detecting constraints to the inclusion of ASD and MIS students in private schools and determines whether these constraints are caused by teachers' lack of awareness or lack of support or lack of proper training.

1.5 Research Structure

This dissertation consists of five chapters. The introduction builds a background of the core meaning of inclusion and its role to a diverse community, it touches on the main conventions that regulate the right of people and students with special needs worldwide

and in the UAE. It also outlines the objectives, research questions, and research significance.

Chapter two looks over previous papers that studied inclusive education worldwide and in the country in addition to teachers` attitude. Moreover, this chapter provides a theoretical background of Autism and MIS. Chapter three describes the methodological approach that was followed. It offers an explanation on the procedures, design, participants, context, and ethical considerations. Additionally, it introduces the research tools, the rationale behind choosing them in addition to their validation and reliability. It also suggested an analysis plan. Chapter four displays and discusses the main findings of the quantitative and qualitative instrument's data in order to answer the research questions. Finally, chapter five provides a summary of the study and outlines the recommendation, implications, and limitations.

2. Chapter Two: Literature Review

This main purpose of this paper is to explore teachers` awareness and attitude towards the inclusion of students with Autism and MIS in regular classes in private schools. This chapter provides an overview of the previous literature that explored inclusion worldwide and in the UAE, and the impact of teachers` attitude and awareness on mainstreaming and ways to shift to a more positive attitude. It outlines the main papers that explored teachers views towards inclusion in the UAE. It also analyzes some theories related to ASD and MIS.

2.1 Inclusive Education, Theoretical Background

After the Universal Declaration of Human Rights (UDHR) in 1948, the Salamanca Statement and Framework for Action on Special Needs Education in 1994, and the UN Convention on the Rights of Persons with Disabilities in 2006, inclusive education became a worldwide phenomenon (Yada, Tolvanen & Savolainen 2018). This trend forced many countries to issue their own regulations to assure the provision of a tolerant educational environment for all students according to their needs. To achieve that, the school system has to go through a laborious change in ‘` value systems, an understanding of teachers and parents’ role, and in pedagogics in general.’’ (Nigmatov 2014.p.156) to create harmonious communities. A community can be completely developed and established with the contribution of all its members, without holding a prejudicial attitude against any of its segments (Nigmatov 2014). To establish a full-fledged society, the education sector has to embrace inclusiveness and diversity. In

civilized societies, education becomes a tool towards social inclusion where all individuals despite their differences have the right to education (Jordan 2008, Unianu 2012), the later author added that this type of education teaches people values, understanding, knowledge, and skills to play an effective role in their communities. This education allows students with exceptional needs to receive their learning with their typically developing peers in the same class with suitable support services (Mesibov & Shea 1996). Although efforts are exerted to build inclusive communities by developing inclusive education and despite the embrace of inclusion as a theoretical concept, preconceived ideas towards exceptional learners still exist (Chhabra, Srivastava and Srivastava 2010). Further, a clear understanding and operational procedures that help the field of learning disabilities are missing regardless of all the good intentions of teachers and researchers over the course of 40 years (Wasta 2006). Many factors contribute to the transformation of these prejudiced concepts. One of the most important factors in the success of this social change is teachers. Therefore, preparing teachers and equip them with the necessary skills is mandatory, as Yada, Tolvanen & Savolainen (2018) outlined that the next generation would be positive to the notion of inclusion and establish inclusive societies if teachers` have self-efficacy and positive attitudes to teach inclusively which would boost an inclusive environment in the class and teach students to be more inclusive by setting examples. If teachers` perceive students with exceptional abilities genuinely in their classes, their typical students will do the same, and a constructive communication between them will occur (Robertson, Chamberlain & Kasari 2003) so typical students will accept the fact that

students with disabilities are part of the class and school community and students with disability will not feel isolated.

Equity in education is fundamental to achieve the desired goals of inclusion, the services provided to students must match their needs in a respectful and fair manner and educators should consider that their students have different learning styles and various demands and their uniqueness would embellish the learning experience rather than implying their inferiority or superiority (Seychell 2018). Moreover, the educational system has to be flexible and teachers have to bear in mind that people perceive the world differently so they need to be treated differently based on their abilities to achieve equity (Jordan 2008).

According to Peters & Oliver (2009) exclusion in the education system exists up to this time all over the world, the same concept was assured by Dzulkifli (2015) who believed that prejudice in education is a universal problem and the whole world is struggling to provide all students with the best educational practices. Whereas, some authors opined that these efforts did not go in vain and including students with special needs have shifted from an issue of dispute (Cooper, Griffith & Filer 1999) to a “ systematic improvement process” that uses a variety of tactics to facilitate the learning of all students (Fernández 2017). Thus, authentic inclusion can occur by believing in its ability to offer students with fair chances to take part in school life (Peters & Oliver 2009).

Sometimes, teachers fail to address the needs of their special education students although they have positive intentions and skills. Their efforts seem to be unsystematic

or inconsistent. This can be imputed for several reasons. For instance, the lack of collaboration between the schools` personnel from one side and with parents from the other side due to teachers` workload as they do not have the adequate time to work side by side with schools` staff and parents (Yada & Savolainen2017). Another factor is the extra planning and preparation that teachers have to do to provide their students with what they need (Alghazo & Naggar Gaad 2004). Thus, one way to alternate teachers` position to inclusion could be by reducing their work load to give them the sufficient time to plan and work cooperatively.

One more factor that was addressed by Cooper, Griffith & Filer (1999) is the critical role typical students play in this process and called educators to use activities to prepare their students to be more considerate towards their classmates without regard to their differences or abilities. Gaad (2014) also outlined the vital role of typical students in the inclusion of their special education peers and noted that it is possible to change regular students` positions toward exceptional learners by increasing their awareness. Moreover, students with special needs learn by modeling from their peers, so including them in regular classes would increase their learning and self-esteem, blend them with their peers, shift typical students` attitude towards them, and minimize stigmatization (Mesibov & Shea 1996). Therefore, shifting to inclusive education and accordingly to an inclusive society needs the association of teachers, stakeholders, students, and parents` efforts (Yada & Savolainen 2017).

2.2 Teachers` Attitude

Hence teachers play a crucial role in the education system, many studies were carried out worldwide to investigate their attitude towards inclusive education, determine the factors that formed their views, and suggest strategies to reshape their attitude. Many researchers stressed on the importance of working towards changing the perception of preservice and in-service teachers towards inclusive education through adequate training where both knowledge and practice are involved. For example, Fernández (2017) carried out a study in Spain to explore the attitude of pre-service teachers towards inclusion and the impact of their attitude during their traineeship. It was found that although those teachers candidates had a positive attitude and were prepared to teach inclusively, they failed to practice this knowledge in reality. So, teachers` positive attitude and theoretical knowledge alone are not enough for the success of inclusion. Fernández findings were a confirmation of Melekoglu (2013) findings in Turkey who studied prospective teachers` attitude who had the chance to put theoretical knowledge into practice by participating in a project and interacting with special education students in the field which elevated their attitude and awareness, and concluded that prospective teachers need both knowledge ‘ theory’ and experience ‘ practice’ to upgrade the quality of inclusive teaching. Nevertheless, it is not enough for teachers to interact with people with the exceptional needs to build a positive attitude toward inclusion, but also to teach them to increase their belief in their innate abilities to teach students with exceptional needs in their classes (Yada, Tolvanen & Savolainen 2018). So, teachers` experience in teaching students

with special needs would positively affect their self-efficacy and attitude towards inclusion (Unianu 2012, Yada & Savolainen 2017, Yada, Tolvanen & Savolainen 2018). Unianu (2012) added some other factors that could shape a positive attitude to inclusion such as modifying the curriculum, active participation from support teachers, enough time to prepare for educational activities, less number of students in a class, the collaboration between all individuals who are involved in the process of inclusion, and increasing teachers` knowledge of inclusion and its elements through appropriate training. The researcher also opined that the nature of the student`s case and its severity, and teachers` trust in their own competencies could hinder the process.

2.3 Inclusion in UAE and Teachers` Attitude

The United Arab Emirates is part of this global movement that aims to build inclusive societies. It embraced several laws and acts that ratify with the international conventions to protect the rights of people of determination and directed the efforts to construct an inclusive education which in turn would prepare the next generation to act more inclusively in their communities. However, these efforts did not follow a systematic approach and mostly stemmed from personal efforts (Gaad 2014). Moreover, this shift has created new challenges and responsibilities for teachers in their classes (Alghazo & Naggar Gaad 2004). These responsibilities and challenges affected teachers` standpoint about inclusive education. Several studies were carried out in the country to study the state of inclusive education and teachers` opinions in regard to

inclusion. This section will inspect some of these studies chronologically to trace the progress in inclusive education and examine teachers` attitude in the country.

Alghazo & Naggar Gaad (2004) investigated teachers` attitude in public schools to teach students with disabilities and found that they had a negative disposition about inclusion, especially male teachers. Also, students with severe disabilities and behavioural issues were the least accepted categories. They suggested educating in-service teacher through workshops and provide prospective teachers with opportunities to interact with students with special need in an inclusive context through ‘’ planned field visits’’.

Bradshaw (2009) studied teachers` standpoints of inclusion across the UAE and found that teachers did not believe that inclusion exists or at least it is still at its first stages. This belief is probably originated from a lack of awareness about inclusion. Most of the surveyed teachers were not trained to teach students with special needs although they had students with exceptional needs in their classes. Strangely enough, the teachers in this study expressed their rejection to learn more about these cases, which indicates a negative attitude towards inclusion, especially students with behavioural and physical disabilities. The researcher also remarked that student teachers had more knowledge and were more open to the idea of mainstreaming than in-service teachers who presumed that the education system is fine and no need for any changes and expressed their unease and concerns about inclusion.

Anati (2012) also studied teachers` views of integrating students with disabilities in mainstream general schools in Abu Dhabi and noted that teachers accepted the precept

of inclusion as a civil right, nonetheless, they had reservations on the way it is implemented in their schools and that their schools do not have clear methodical approach to plan, guide and evaluate the teaching and learning in an inclusive setting. They related their dissatisfaction of this practice in their schools to the deficiency of fund, resources, services, qualified staff, teachers` training and the quality of such training, the lack of school policies that regulate inclusion, as well as, the inadequate understanding of inclusion as a practice among decision makers in their schools. The participant teachers had concerns about having a special education student in regular classes and were discontent about their own efficacy to teach them. The researcher concluded that there is no consistency in the way inclusion is delivered in the country, it varied from fully integrated to totally segregated classrooms and requested to increase special education modules to the students in college to increase their awareness of this regard.

A fourth study by Dukmak (2013) who explored teachers` disposition to inclusion in UAE in relation to age, gender, and experience. In his study teachers were generally supportive of the principle of inclusion especially male teachers. Furthermore, teachers did not welcome the inclusion of students with intellectual disabilities, emotional and behavioural disorders, and visual impairment. They believed that these cases have to be taught in segregated contexts. The researcher also noted the influence of culture on teachers` attitude toward inclusive education.

A recent study by Alborno (2017) to explore the enforcement of the country's initiative “ School for All” reported a gradual progress in the inclusive education and pointed

out several challenges that could decelerate the advancement of the process of inclusion such as teachers` training, support services, assistive technology, and cultural and religious misunderstandings. She noted that the MOE provided professional development programs to help teachers to be more efficient and alter their views. Teachers admitted that the training they received helped to change their attitude to inclusive education, yet they found them conceptual and hard to implement in real contexts. The researcher opined that the pressure for supremacy in international tests might negatively impact inclusive education. Likewise, Shriner & Ganguly (2007) noted the increasing focus on students` performance in international tests and Wasta (2006) speculated that all the efforts that were made to reshape people's mindset about students with external requirements might be wasted in schools` strive for excellence. Therefore, achieving high results in benchmark tests, as well as, have all these kids educated, inclusion has become a challenge.

In brief, the country is committed to the principle of inclusion and teachers` attitude has changed from rejection into acceptance. Nonetheless, teachers had concerns about their preparedness and abilities to implement it and to teach students with severe disabilities and behavioural problems. The researchers stressed the value of preparing prospective teachers and in-service teachers to the new practices in inclusive education.

2.4 Autism Spectrum Disorder and Meares Irlen Syndrome

This paper aims to study teachers' viewpoint in teaching ASD and MIS students, therefore, a brief background of their main characteristics, prevalence, and intervention strategies, in addition to some misconceptions regarding these two cases are outlined in this section

2.4.1 Autism Spectrum Disorder Background

“The term ‘Autism’ was first used by Kanner (1943) to describe those children who display marked solitariness and an inability to relate to others, an obsessive desire for sameness and an insistence upon repetitive activities, and poor language development” (Connor 1999 p. 80). It is “A heterogeneous neurodevelopmental disorder characterized by impaired social interaction and communication, as well as restricted or stereotyped patterns of behaviour or interests” (Cappe et al. 2017,p 498). This prolonged neurodevelopmental and behavioural disorder that has a genetic origin impacts the individuals' life as well as their families and communities (Rahbar, Ibrahim & Assassi 2010, Elsabbagh et al. 2012). The number of individuals who are diagnosed with ASD is augmenting in recent years ((Irlen 2010). Which lead to the inclusion of a greater number of ASD students in regular schools in response to the social and political demands (Jordan 2008). For that, educators need to be prepared to teach a student on the spectrum at one point in their professional journey. Many theories proposed and discussed extensively the reasons behind the growing numbers of incidents diagnosed with autism and consequently the growing numbers of ASD

students in regular classes. According to Russell, Kelly & Golding (2010) the disagreement on the reasons behind the growth of ASD cases caused the numbers to rise and the reasons behind the rising number of Autism diagnosis are the broadening of the spectrum to include milder conditions like Asperger syndrome, the diagnosis of children at early ages, and the increased awareness among parents and practitioners. Another reason is the progress in the screening tools (Elsabbagh et al. 2012, Zarafshan et al. 2013)

2.4.1.1 Prevalence

The numbers of ASD children between the ages of 6 to 11 years old have increased from 0.6 to 3.1 per 1000 from the year 1994 to 2003 in the US (Shattuck 2006). In a recent study in Quebec - Canada the numbers have accelerated from 15 per 10,000 in 2000-2001 to 122 per 10,000 in 2014-2015 and boys were four times more than girls (Diallo et al. 2017). Al-Abbady, Hessian & Alaam (2017) stated that 62 cases per 10,000 people suffer from Autism around the world.

Such information about the prevalence of ASD incidents in the developing countries is insufficient due to the inadequacy of research base due to the scarcity of research training programs and trained individuals (Rahbar, Ibrahim & Assassi 2010). Eapen et al. (2007) noted that the scenario in the Arabian Gulf region is not different, and despite the data shortage about the exact numbers of Autism cases in the region, the prevalence of is escalating which might be ascribed to the increased knowledge and awareness among parents and specialists.

In the UAE context, a recent study by Al-Abbady, Hessian & Alaam (2017) found that the number of autistic registers in Dubai increased in the last four years, third of these cases are among UAE national individuals. They also estimated that 199 children were on the spectrum in the year 2014. According to Dubai Autism Centre, Autism affected 1 in 146 births. However, there is a possibility that these numbers might not be accurate especially that many families don't look for early diagnosis because of cultural reasons (Al-Abbady, Hessian & Alaam 2017).

2.4.1.2 Autism in Mainstream Schools

Irrespective of the reasons that led to this growth, it is ascertained that the numbers are growing which makes the inclusion of students on the spectrum in mainstream schools inevitable. Families, educational system, and governments are obliged to supply people with autism with the proper support they need (Irlen 2010). The inclusion of ASD students in mainstream schools is a challenging issue for teachers, stakeholders, parents, and the students themselves. Young, Mannix McNamara & Coughlan (2017) argued that these challenges are caused by the distinct characteristics ASD individuals exhibit such as difficulties in social interactions, uncommon behaviour and limited interests, especially those who are highly functioning for their disabilities are cryptic to their teachers which probably will negatively impact their learning.

According to Brede et al. (2017), ASD students and their parents had a negative experience in mainstream classes, their schools could not provide them with autism with what they need and the strategies that were used with ASD students were not

appropriate and caused regression in the students` academic performance and behaviour, the author added that some ASD students might be vulnerable to be excluded from mainstream schools due to these challenges. Therefore, personal support and services for the students and their families, regular guidance, modified curriculum, clear and well-designed learning environment, practical methods to address behavioural issues, and involving parents are practical platform to support people with Autism and eliminate challenges (Iovannone et al. 2003).

On the other hand, teachers face challenges in teaching students with Autism. Young, Mannix McNamara & Coughlan (2017) claimed that teachers ascribed these challenges to lack of trust in their abilities to teach ASD students in particular and student with special education needs in general and to external factors such as insufficient resources and funding. The authors believed that the real reasons to the “ state of quasi - inclusion “ are funding, facilities, and the incentive to see it really work. Therefore, an authentic inclusion requires a combination of resources, time, and a welcoming setting (Fernández 2017). Interestingly, Jordan (2008) approached the inclusion of ASD students from the ASD perspective and suggested that if it is hard for a teacher to teach an ASD student, it is also hard for the students with ASD to understand the school context they are in. If ASD students lack the natural ability to understand their teachers, similarly, their teachers` lack the natural ability to understand their ASD students. So teachers need to figure out alternative ways far from “ our natural social instincts” to approach their ASD students as their students do. The recognition of differences among people help teachers become better educators and their profession becomes easier.

2.4.1.3 Misconceptions

Researchers studied the control beliefs about ASD people among in-service and pre-service teachers and found that they embraced inaccurate beliefs about ASD people. For example, Sanz-Cervera et al. (2017) studied mistaken ideas about autism amid student teachers in the college and found that general classroom teachers and special education teachers endorsed misconceptions about this disorder regardless of any extra training or teaching experience. Al-Sharbati et al. (2013) found that the attitude of Omani teachers towards ASD was driven by misconceptions and added that these incorrect ideas are observed worldwide among people with different backgrounds. John, Knott & Harvey (2017.p.848) found that college students endorsed misconceived beliefs about people with Autism and referred to them as myths, these myths are nonsocial, do not like to be touched, self-centered, do not understand social rejection, gifted, harmful, and insane.

Therefore, spreading awareness about autism through media, training, education, and interacting with people who are aware of the spectrum would increase awareness (John, Knott & Harvey 2017). Also, extensive training and interaction with ASD students expand peoples` awareness (Sanz-Cervera et al. 2017). Consequently, more endeavours are required to promote a positive attitude amongst teachers and individuals who have direct interaction with ASD children (Park & Chitiyo 2010).

2.4.2 Meares Irlen Syndrome Background

The number of students with diverse needs is increasing in regular classes. Some of which are popular and well known to educators, while others are inconspicuous. MIS is one of the unnoticeable cases among the general population (Giuliani & Schwarz 2017) despite the accumulated knowledge in the literature which studied this syndrome and its implication on students` learning in class. It is not a learning difficulty (Irlen 2010), however, it might cause learning problems to some students. It is mostly connected to reading proficiency. This section specifies the main theories underlying this syndrome, look into the literature related to its symptoms, its learning implications, prevalence, and the controversy around its widely used intervention methods.

Literature has used different terminologies to refer to this perceptual disorder such as Meares Irlen Syndrome (MIS), Visual Stress (VS), Irlen Syndrome (IS), Scotopic Sensitivity (SC), and Meares-Irlen Syndrome Visual Stress (MISVS). In this paper, Meares Irlen Syndrome MIS will be used to refer to this case. MIS is a defect in visual processing that affects the way visual data perceived, interpreted and processed by the brain. It is'' a neurological disorder affecting the visual system'' (Loew, Marsh & Watson 2014. P 91). This syndrome is hereditary and affects males more than females (Robinson, Foreman & Dear 2000).

The data we perceive through our senses is processed by our brains, so when the eyes grasp the light energy it turns it into `` neural impulses'' and send it to the brain which in turn interpret it into a meaningful data (Seychell 2018). This type of eye abnormalities does not mean that a student should necessarily have a problem with vision, rather the problem can be with the way the brain processes the light energy. Wilkins, Huang & Cao (2004) pointed out that this malfunction is widely unnoticed because of the assumption that a regular eye test can discover

any refractive or binocular awkwardness that would affect the reading. The authors stressed that this disorder is a different type of malfunction that a person with dyslexia and without dyslexia can suffer from and it cannot be diagnosed by a regular sight testing in an optical clinic. Boyle & Jindal-Snape (2012) noted that school staff ignorance of this disorder and its symptoms would probably leave students who experience reading difficulty for a long time unidentified and would affect their self-esteem and tendency to learn. They added that this disorder is easy to identify and cater for, however, lots of educators cannot pick it up because they are unfamiliar with it. Educators and physicians` awareness of this case would serve the students` learning (Robinson, Foreman & Dear 2000). Therefore, preliminary diagnosis allows parents and educators to understand its learning ramifications.

Part of MIS traits are reading avoidance, distraction, and bad handwriting which can be misconceived as idleness or might be diagnosed as a different learning difficulty (Loew, Marsh & Watson 2014). The common symptoms of MIS are “ Slow reading -Strain & fatigue with extended reading- Print distortions, esp. with black print on white paper - Preference for reading text printed on coloured paper - Lack of depth perception or difficulty in judging distances - A feeling of clumsiness when negotiating uneven terrain - Dislike of bright light or glare (photophobia) - Dislike of reading/writing under fluorescent lighting - Difficulty maintaining a train of thought during conversation” (Loew, Marsh & Watson 2014, p 90).

Lots of debate surrounds the syndrome itself (Tsogka & Snowling 2012), some claimed that MIS itself as a distinct case is polemic because its symptoms could be another facet of dyslexia (Uccula, Enna & Mulatti 2014). This claim contradicts Kruk, Sumbler & Willows (2008) view who argued that the perceptual malfunctions in MISViS differs from the perceptual malfunctions which is known as a visual processing deficit subtype of dyslexia and stressed that MISViS and dyslexia are separate conditions. Another aspect of this disorder that attracted

lots of argument is the way of diagnosing (Ritchie, Sala & McIntosh 2011, Uccula, Enna & Mulatti 2014), especially that there is no methodological way that can be used to identify the problem except by an instant improvement in reading ability or the perpetual use of the overlays for an extended period of time(Kriss and Evans 2005).

2.4.2.1 Prevalence

The disagreement of the prevalence among the population was clear in the literature. Some studies suggested that the prevalence of this disorder is 20–34% Kriss and Evans (2005). Uccula, Enna & Mulatti (2014) mentioned in their literature review that the commonness of this condition would be 12 -14% of the general subjects and 46% of dyslexic people. In another study by Kruk, Sumbler & Willows (2008) 36 students were tested for MIS and half of them had this condition. Loew (2017) believed that it is not a matter of percentage whether 5% or 15% suffer from this condition, there are many other learning disabilities that are only present in the general population by 5%.

Unfortunately, there were no research papers that studied this disorder in the country, so it was hard to track its prevalence in the UAE, however, an article in Al Bayan newspaper interviewed the first Irlen screener in the country who claimed that she diagnosed 120 cases in one year (Yahya 2014).

2.4.2.2 MIS and Reading Skill

Because of the constant connection between this syndrome and reading ability, it is important to outline some theories that addressed the effect of the modern school system on students' reading skill and its connection to MIS. Loew (2017) there is an endorsement of the remarkable pervasiveness of MIS among the public and its entanglement with reading especially reading in rooms supplied by fluorescent lighting. His hypothesis is that modern illumination has been changed tremendously in Australian schools and helped in increasing visual discomfort among students and therefore decreased their fluency and numeracy capabilities in addition to issues related to "attention, behaviour, headaches, and migraine" and that according to the author, who himself has VS, is caused by the increased brightness of lighting in classrooms and the use of glaring education premises, as well as the use of high bright white papers which altogether causes irritation to the retina that obtain the inverted "photons" off the printed page. Therefore, the most cost-efficient procedure that governments could do to improve students' numeracy and literacy would be by alternating the bright visual resources to a more user-friendly one instead of the massive infusion of spending in a trial to boost students' literacy and numeracy. Wilkins, Huang & Cao (2004) addressed the same issue of modern reading factors that cause eyes agitation to regular students and student with MIS but from a different angle as they believed that these factors are neglected. They claimed that students start to experience failure in reading at the age of 7 and that because of the size, space and the style of the printed texts and the reading texts start to change at this age in a way that harms most of the students and specifically students with MIS. According to them, many children stated that reading large- spaced texts are more comfortable than small- spaced texts. For that, the authors opined that children's materials who are less than 10 years old must be printed in

large font with wide spaces to prevent distortion in the first place.

2.4.2.3 Coloured overlays

Coloured overlays and precision tinted lenses are widely used to alleviate the symptoms of MIS. Even this type of intervention not agreed upon. Despite the popularity of the coloured overlays, there is a great dispute of their benefits and that is ‘ ‘ Because the assessment is subjective and the outcome of treatment is also subjective (a change in symptoms), the client’s belief is likely to have a major influence on the results of treatment ‘ ‘ (Wilkins, Huang & Cao 2004. p 158). Researchers had three different positions in regard to overlays effectiveness, the first group was positive about the benefits of the overlays, a second group saw the benefits of the coloured filters but had concerns about its reliability, and a third group did not believe that the use of overlays had an advantage on those who used them. Below is a brief review for some of these positions.

IMAIZUMI, HIBINO & KOYAMA (2016) examined the effect of coloured overlays on people with and without MIS in Japan using both the English language and hiragana, syllabic writing used in Japanese, and found out that all participants were positive about the reduction of reading stress using the bluish – coloured overlays. These findings confirmed the previous findings of Kriss and Evans (2005) who supported the effective role of coloured overlays but did not designate a specific colour and claimed that the symptoms of MIS can be relieved by the use of these coloured filters and reading can be improved (Boyle & Jindal-Snape 2012). Likewise, Irlen (2010) claimed that 60% of her patients benefited from the coloured filters.

Hollis et al. (2007) used Wilkins Rate of Reading Test (WRRT) and Eysenck Personality Inventory (EPI) to locate the differences between individuals with MIS and typical people. They reported differences in personality characteristics between the two groups, people with

MIS were found to have a nervous system that can be catalyzed by outer factors, this might give an explanation of their tendency to use precision tinted lenses as these tints might reduce the excessive excitable areas in the brain and therefore minimize visual distortion. They probably refer to the explanation that was provided by Wilkins, Huang & Cao (2004, p 156,157) who opined that the use of coloured filters is an issue of debate and suggested that coloured overlays ‘‘redistribute the activity within the visual cortex in such a way as to reduce the amount of excitation in locally hyperexcitable regions.’’ and the reason behind the different colour preferences is due to the different ‘‘distribution of hyperexcitability in the visual cortex’’ that ‘‘varies from one person to another’’. They also predicted that coloured overlays could benefit people who suffer from neurological disorders, such as ‘‘multiple sclerosis, autism and head injury’’ and migraine, however, their prediction is not based on evidence or research. Henderson, Tsogka & Snowling (2012) questioned the effectiveness of the coloured filters, they studied two groups of undergraduate students with and without dyslexia and used overlays to read disconnected texts. The reading speed increased in both groups, however, there was not a significant difference between them. Moreover, the filters did not boost the reading rate or the reading comprehension and when the test was done for the second time, the reading speed of the dyslexic group declined which led them to conclude that using overlays to diagnose MIS and as a reading tool for dyslexic people might not be the desired solution.

Whereas, opponents claimed that these overlays do not have any positive effects on the subjects` symptoms or reading fluency. Ritchie, Sala & McIntosh (2011) did not only question the benefits of the coloured overlays, but they also doubted the disorder itself as a cause of reading deficiency among young students. In their study 61 students with reading problems were examined by an Irlen pathologist and found that 77% of the sample suffered from MIS, a group of students used prescribed coloured overlays, a second group used non prescribed

coloured overlays and a third group did not use any filters, they concluded that there was no instant improvement in students' reading by using the coloured overlay, and added that it is everyone's responsibility to deal with this type of intervention with heedfulness.

This dispute was also recognized by Uccula, Enna & Mulatti (2014) who mentioned in their literature review that there is a disagreement on the efficiency of overlays in their relation to reading fluency and speed. Whether MIS is a distinct condition or a different form of dyslexia, one should admit that it has an impact on some individuals who are affected by it and this effect is clear and varies in the individual's ability to read, write, spell, and concentrate (Loew, Marsh & Watson 2014).

2.4.2.4 The Intersection Between MIS and Other Disorders

Few papers studied the connection between MIS and other conditions. For example, Loew, Marsh & Watson (2014) argued that VS (Visual Stress) and CFS (Chronic Fatigue Syndrome) have common features, both share the printed distortion symptoms, and individuals who suffered from VS and those who had CFS preferred to read texts printed on coloured papers and explained that VS affects the visual neurological system and CFS consists of a group of neurological factors. Additionally, Giuliani & Schwarz (2017) carried out a study on an autistic patient who was diagnosed with MIS and found that some sensory impairment exhibited by this patient were caused by MIS and were reduced by the use of tinted – lenses. They added that MIS might influence many ASD people due to similar symptoms in both cases and noted the importance of spreading the knowledge of MIS impact on ASD among personnel who work with ASD people especially consultant and evaluators to not neglect the prospect of MIS role in the hypersensitivity symptoms caused by visual perceptual data. Further, ‘‘The prolonged afterimages experienced by those with high levels

of autistic traits might be linked to some of the sensory difficulties experienced by those with autism, specifically, hypersensitivity to light'' (Sperandio et al. 2017. P 457). Another allegation was proposed by Irlen (2010) who believed that coloured filters could help individuals with autism and lessen their hypersensitivity to light which might improve their life quality.

2.5.Summary

This chapter reviewed some studies outlining this research paper and explored the importance of inclusive education to the community and the crucial roles teachers, peers and policymakers play in this innovation. Additionally, this chapter reviewed teachers` disposition to inclusion worldwide and in the country and factors that formed their attitude which would help to clarify this research standpoint and determine the research instruments. Moreover, it investigated previous literature about ASD and MIS and built a background about their main characteristics and some controversies that surrounded them in addition to their implications on students` learning.

3. Chapter Three: Methodology

This chapter portrays the methodological approach that was followed in this research paper. It begins with an introduction to the significance of research methodology followed by a description of the research approach and design by laying out details about the sampling procedure and sample size, in addition to a description of the research instruments used in this study. The validity and reliability of the survey and the reflective questions are outlined, as well as the data analysis and ethical consideration.

3.1. Research Approach and Design

The purpose of this paper was to investigate teachers' standpoint towards inclusion in general through investigating their attitude to teach students with ASD and MIS in regular classes in 4 private schools in the Emirates of Dubai and Sharjah. This paper examined teachers' awareness of the main traits of these two disorders, some intervention strategies, and inaccurate views teachers might have about them, in addition to analyzing teachers' written thoughts about their teaching experience of students with ASD or MIS and the role of special education departments in the inclusion of these students.

Thus, this study employed different data collection tools to triangulate the findings and answer the research questions. A combination of qualitative and quantitative techniques was used and they are an online survey, teachers' written reflections and a

group of semi-structured interviews. The product of qualitative and quantitative methods together is considerable than the use of one method (Molina-Azorin 2016). Also, using various methods in research allows to determine the validity or accuracy of the data, and the use of triangulation as a mixed method procedure allows researchers to avoid bias that might exist in using a single methodology (Denzin 2009). In other words, triangulation would give this research work strength and help to reach valid conclusions (Molina-Azorin 2016). It also uncovers the dissimilar aspect of the same phenomena (Berg 2001).

The choice of the schools was determined by the availability of ASD and MIS cases in regular classes, the accessibility and willingness to take part in this study, and the years of experience each school has. Schools A and E were open for about 20 and 13 years respectively while schools B and C were open for 5 years only. This variation in the years of experience may influence the services and support provided to students with MIS and Autism and their teachers.

After obtaining the initial approval from the schools' administrate to participate in the study, a copy of the university's research letter and written consent were shared through email to give them an overview of the research objectives and assure anonymity and confidentiality of the data gathered.

The methodology in this paper is divided into three components that mostly were conducted concurrently. Part one was an online survey, teachers from different backgrounds who teach different grade levels were asked to answer the online survey (Appendix 1). The purpose behind involving teachers with different demographic

backgrounds was to obtain diversity and representability. The second part was the reflective responses. Teachers who taught ASD or MIS students this year or last year precisely were asked to reflect on their experience by answering a series of questions that were constructed for the purpose of this research (Appendix 2). The third part was semi-structured interviews with staff members working in the special education department.

3.2 Sampling and Procedures

The sample recruited for this paper were individuals working in four private schools, three of these schools are located in Dubai and one in Sharjah. The schools were letter coded A,B,C,E. Letter D was given to a fifth school that was meant to take part in the research, but because of data scarcity, it was discarded from the study.

The participation in the online survey was voluntary and based on the accessibility. An online link was shared with the head of the special education department who in turn shared it with all teachers to ensure that participants are from different backgrounds and experiences. Participants in the quantitative method are usually recruited with arbitrary Creswell (2009).

Teachers who participated in the reflective responses were recruited via emails, word of mouth, or nominated by their schools to digress in their experience in teaching students with ASD or MIS in regular classes. Subjects who are engaged in this qualitative data collection are chosen based on their experience in the topic of study (Creswell 2009).

3.3 Instrumentation

Multiple instruments have been used in this study in order to collect the needed data. The first tool is an online survey that was used to measure teachers' attitude and awareness towards the inclusion of ASD and MIS students in addition to their readiness to teach them in regular classes. The online surveys was used because it is "faster, cheaper, easier to implement, more interactive, better for open-ended questions, and can be tracked precisely"(Pan 2010. p130). A second tool is a group of reflective responses written by teachers to scrutinize their experience in teaching ASD or MIS students. This tool gives teachers the opportunity to communicate exact and complete information about their experiences (Wlodarczyk et al. 2015). The third tool is the semi-structured interviews with representatives from the special education departments in each school to detect the type of support and training provided to the teachers to help in the inclusion of these two cases. The purpose of choosing this tool was to obtain information and deduce thoughts, opinions, and attitude of the interviewee about the phenomena (Berg 2001).

3.3.1. Teachers` Survey

This instrument aimed to measure teachers` awareness of the main attributes and symptoms of ASD and MIS and ways to intervene in class. It also examined teachers` readiness to teach students with ASD and MIS in regular classes and some inaccurate beliefs about both cases.

Participants were from various age groups and gender. They teach different subjects, different grade levels, and have different years of experience. Having participants from different backgrounds lead to a wide range of prospects (John, Knott & Harvey 2017). The online survey began with an outline of the aims of the research and contained a declaration of consent and had three sections. The first section sought demographic information about the participants. The second part contained questions about autism spectrum disorder, its characteristics and features, misconceptions and ways of classroom interventions. The third part investigated teachers` knowledge of MIS, incorrect views about it and intervention techniques. Additionally, the survey had two open-ended questions to explore barriers to inclusion in each school from the teachers` perspective and their opinion of the easiest syndrome to cater for.

3.3.2. Teachers` Reflective Responses

A second research tool is teachers` reflective questions. The targeted subjects were teachers who taught ASD and/ or MIS students last year or are currently teaching them this academic year. These teachers were chosen for their neoteric interaction with these two cases so they would probably reflect on their teaching experience with more details rather than teachers who had this experience several years ago. Participants were asked to elaborate on a group of open-ended questions and provide their perceptions based on their experience. The reflective questions were divided into two parts. Part one investigated general demographic information. The second part included 9 questions aimed to capture teachers` perceptions and experiences. The questions were developed

by the researcher to encourage teachers to express as much or as little of their thoughts as they were comfortable with. All responses were alphanumerically coded for confidentiality and analyzed for trends.

3.3.3. Interviews

A group of semi-structured interviews were conducted with a staff member from the special education departments in each participating school to examine the procedures implemented to include students with MIS and ASD in regular classes, and the support provided to their teachers. Some participants were nominated by their schools and others volunteered to do the interview on behalf of their departments. The questions were prepared and shared with the participants prior to the interviews. However, for the purpose of clarification, additional questions were asked that to my estimation were necessary to the credibility of the data collected. Semi-structured interviews are pliable and useful to gather helpful information and “interjection” during the interview would reveal deeper data (Pathak & Intratat 2012). Also, one of the benefits of using interviews along with the survey and reflective responses is that interviews allow interviewees to provide a comprehensive depiction of their experiences and actions (Brannen 2005).

A letter to the prospective participants explaining the research intention was sent via email to set an appointment for the phone interviews. Participants` questions and concerns about their participation in the study were clarified and confidentiality was assured. All interviews were audio taped with the participants` prior verbal consent.

Then they were transcribed verbatim. The data for each interview were analyzed separately.

Three of the interviews were done on phone due to time confines from my side and their sides as well. Further, the schools are located in Dubai and they are at some distance from one another from my location. Moreover, taking permission to leave my work in Sharjah to conduct these interviews during work hours was not possible. So, a reasonable solution was to do them by phone. Moreover, telephone interviewees are a feasible technique to collect data from participants in different areas (Berg 2001). The fourth interviewee asked to answer the interview questions in a written form.

3.4. Validity and Reliability of the Research Tools

The electronic survey and reflective responses forms began with a letterhead explaining the nature of the research and ensuring confidentiality and anonymity of the data. No information about the participants' identity were included. The questions were selected based on literature and aimed to address the points that are of interest to educators in the field. A pilot study was done by four teachers who are not among the participants in the study to highlight any discrepancies or contradictions in the survey questions. Few modifications were done to the survey per to their recommendations to serve the purpose of the survey. The reflective questions were targeted towards teachers speaking Arabic and English languages to be able to reach as many teachers as possible. The document was written in English and translated to the Arabic language. It was revised by three bilingual professionals who were independent of the sample to ensure

that both versions are compatible, and two additional individuals reviewed the structure of the sentences in both versions. The initial list of interview questions was revised by an external reviewer to make them easy to understand and to avoid bias or leading questions and any potential ambiguity. All interviewees gave their verbal consent before recording the interviews and were assured that the collected data will be strictly confidential and anonymous.

3.5. Data Analysis

The data collected from the survey was classified into 3 categories. 1- Data that measures teachers' awareness of the main characteristics of ASD and MIS. 2- Data that measures teachers' readiness and awareness of some classroom techniques to support students with ASD and MIS, and 3- Data about preconceived opinions regarding these two cases. The data was analyzed using SPSS. The Mean, standard deviation, and frequency were used to study these 3 categories. Additionally, T-test and One-way ANOVA analytical tests were used to measure any significant difference in teachers' awareness and attitude and to determine if there is any relation between teachers' awareness and other factors such as age, grade level, years of experience, previous teaching experience, and training. No weighting was done on gender factor due to the inconsiderable number of males against females.

On the other hand, a matrix was created for the data collected from written reflective responses and interviews to review them thoroughly and analyze them separately using

a thematic analysis to study trends in qualitative data (Clarke & Braun 2013).(See appendix 3)

3.6. Ethical Considerations

Ethical consideration in this research was taken into account to ensure the anonymity and confidentiality of participants and data collection. The first step was by sending a formal email and the university's research letter to schools` management to ask for permission to carry out the research in their schools. After obtaining their approval, the online survey, reflective questions, and interviews took place.

The online survey and reflective questions forms included a brief introductory paragraph that explained the research intention and informed participants that their participation is voluntary and that their responses are anonymous and confidential. Both tools did not require any personal information about participants or their schools. As for the interviews, verbal consent was obtained from the interviewees prior to the interview. Any identifying features of correspondents were changed. Schools were letter coded, reflective responses were alphanumerically coded, and Interviewees` names were not mentioned.

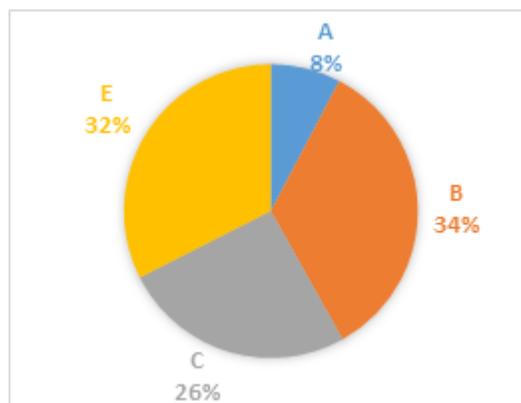
4. Chapter Four: Findings and Discussion

This paper aimed to investigate teachers' attitude towards inclusion through investigating their understanding of Autism and MIS and their readiness to include students with these cases in their classes. This section displays the findings and discussion of the quantitative and qualitative data.

4.1 Findings of Quantitative Data

The total number of responses was 117. Graph1 demonstrates the percentage of participants from each school. The highest number of responses was from school B with (40 responses, 34%) while the least number was from school A with only (8 %, 9 responses). About (32 %, 38 teachers) participated from school E and (30 teachers, 26%) participated from school C.

Figure 1: Survey Participants



The data collected from the online survey was categorized into three groups:

- 1- Teachers` awareness of Autism and MIS features and characteristics.
- 2- Teachers` awareness of some intervention strategies and their readiness to teach students with Autism or MIS.
- 3- Some misconceptions that teachers might hold about these two cases.

The 40 items of the survey questions were graded using a five-point Likert scale of 1 (Strongly disagree) to 5 (Strongly agree). All statistical analyses were performed using the SPSS software.

4.1.1 Demographic Information

The sample size included 117 participants. Around 84% of the participants were females and 16% were males. More than half of the sample was above 31 years of age and less than 41. The majority of teachers had a teaching experience between 6 to 10 and 11 to 15 years and just (8%) had more than 21 years of experience. Participants are currently teaching different grade levels, about the equal percentage (28%) of teachers are teaching grades 1-3 and 10-12, then grades 4 to 6 teachers with (27%), the least number of participants (17%) are teaching grades 7- 9. So, more than half of the participants were elementary teachers.

Figure 2: Participants` ender

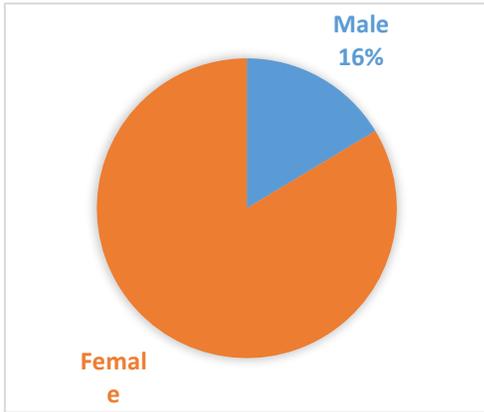


Figure 3: Participants` age

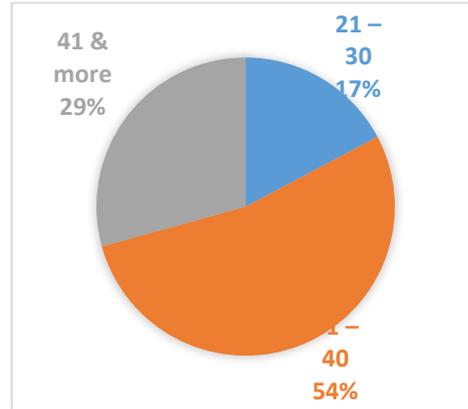


Figure 4: Participants` years of experience

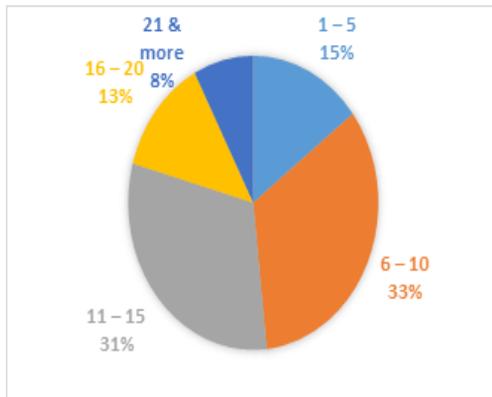
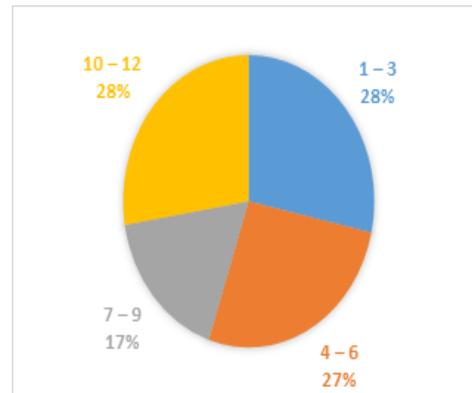


Figure 5: Participants` teaching grade level



4.1.2 The correlation between teachers` knowledge, teaching experience, and training of Autism and MIS.

Figure 6 depicts teachers` responses to questions about their previous background, training, and teaching experience with regard to Autism and MIS. The bar graph shows that the majority (99 teachers) have knowledge about Autism and 16 teachers claimed

their ignorance of Autism disorder. Whereas, 56 teachers assured that they know what is MIS and 61 teachers alleged that they do not know it. Moreover, the number of teachers who taught students with MIS (about 29 teachers) is almost third the number of teachers who taught students with Autism (about 88 teachers) and this can be attributed to the rising knowledge of Autism and the care presented (Elsabbagh et al. 2012). Moreover, the high percentage of teachers` knowledge of Autism does not necessarily mean that they are capable of supporting ASD students in regular classes (Geraldina 2016). The data also shows that the number of teachers who received training in both cases is less the number of those who did not have training in Autism or MIS.

Figure 6: A comparison between teachers` knowledge, experience, and training of Autism and MIS

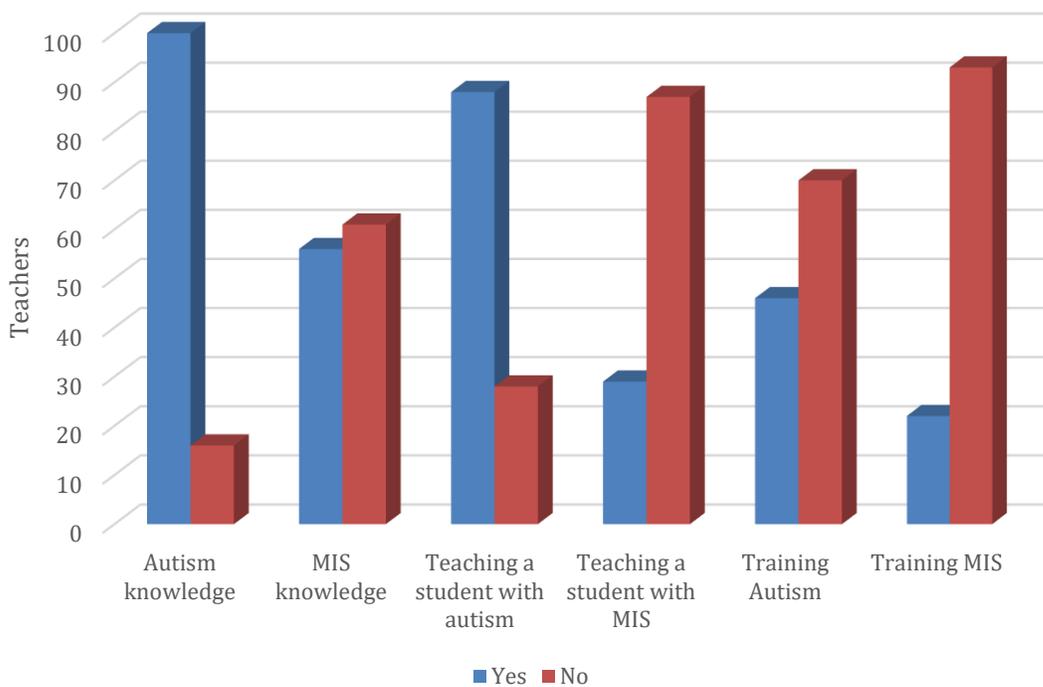


Table 1: The correlation between teachers` knowledge and previous teaching experience of Autism.			
Knowledge	Teaching Experience	Frequency	Percentage
Yes	Yes	80	80.8%
	No	19	19.2%
	Total	99	100%
No	Yes	7	43.8%
	No	9	56.3%
	Total	16	100%
Total		115	100%

Table 2: The correlation between teachers` knowledge and training in Autism.			
Knowledge	Training	Frequency	Percentage
Yes	Yes	44	44.4%
	No	55	55.6%
	Total	99	100%
No	Yes	2	12.5%
	No	14	87.5%
	Total	16	100%
Total		115	100%

Tables 1 and 2 illustrates the relation between teachers` knowledge of Autism and their previous teaching experience of this spectrum. About 80% of teachers who knew what is autism taught a student with this disorder and about 7 teachers reported that they don't know Autism although they have ASD students in their classes. About 55% of the teachers who had knowledge about Autism did not receive training which might indicate that they had their knowledge from different resources other than proper training. Arif et al. (2013) found that most of the participants` knowledge about autism was from the media and stressed the fundamental role of formal ASD training for

teachers. Further, 2 teachers who had training in Autism reported that they do not know what is Autism Spectrum Disorder which might suggest that the training they received were not sufficient, which again suggest that they lack trust in their competencies and knowledge. Sanz-Cervera et al. (2017) argued that despite the training quantity, it would increase teachers' knowledge about the case and Alborn (2017) called to upgrade training offered for teachers.

Table 3: The correlation between teachers' knowledge and the teaching experience of MIS.			
Knowledge	Teaching Experience	Frequency	Percentage
Yes	Yes	27	48.2%
	No	29	51.8%
	Total	56	100%
No	Yes	2	3.3%
	No	58	96.7%
	Total	60	100%
Total		116	100%

Table 4: The correlation between teachers' knowledge and the training in MIS.			
Knowledge	Training	Frequency	Percentage
Yes	Yes	17	30.4%
	No	39	69.6%
	Total	56	100%
No	Yes	5	8.55%
	No	54	91.5%
	Total	59	100%
Total		115	100%

Tables 3 and 4 shows that there is no significant difference between teachers who reported that they knew MIS and those who do not. Only 29 of the sample had a previous teaching experience of this case, two of them did not know about MIS. The

majority of the sample about 93 teachers expressed that they are not trained to teach a student with this case, only 22 participants admitted that they have the necessary training to teach them and 5 teachers who do not have previous knowledge about MIS taught a student with MIS. The data illustrates a deficiency in teachers` training. The majority of the participants reported that they are not trained to teach a student with MIS and more than half of the sample are not trained to teach an ASD student. According to Seychell (2018), parents and educators must be trained to identify any potential case and Park & Chitiyo (2010) noted that trained teachers had a more positive attitude to inclusion than untrained teachers.

4.1.3 Descriptive Analysis of Data collected from the online Survey.

This section aims to analyze the data gathered to explore teachers` understanding of the main characteristics of Autism and MIS, their awareness of some intervention strategies and their beliefs in their self-efficacy, in addition to identifying some possible misconceptions held by teachers about these cases. The number of responses to questions about Autism and MIS differs and that is because some teachers did not answer the MIS section which is probably due to their ignorance of this syndrome.

4.1.3.1 Autism

(See Appendix 4)

The analysis revealed that teachers have good knowledge of the main features of ASD and some of the intervention strategies. For example, the majority of the sample were aware that autism is a neurological disorder with a 70% agreement. About 62% of them knew about the repetitive and restrictive behaviour associated with Autism and about (70%) are conscious of the ASD students` communication problems. Further, about 57% of teachers agreed that ASD students are literal and 65.80% agreed that they need more time to understand spoken language. Around 70.70% were aware that ASD people are sensitive to external stimulations. Overall, about 63.10% with (M= 3.70, ST=0.494) of the respondents were aware of the main features and characteristics of individuals with Autism which reflects a fair awareness among teachers. This finding contradicts the findings of Arif et al (2013) who found that teachers` knowledge of Autism was insufficient.

Further, more than half of the sample were positive about their understanding of the spectrum, 94% of the teachers were convinced that students with autism are able to learn and more than 80% of the respondents were aware of the assessment arrangements and structured learning environment, around 60% believed that ASD students need shadow teachers to help in their integration and this is to an extent compatible with Cappe et al. (2017) argument that a trained teacher assistant in class would support teachers who lack proper training and students of special need. Further, 50% thought that special education teachers must teach ASD students in segregated

settings. Which implies that half of the teachers do not understand the meaning of inclusive education.

Moreover, 80% of the sample opined that teaching ASD students requires emotional and physical effort than other students. This high percentage conforms with Zarafshan et al. (2013) findings that the burnout among teachers of ASD students is higher than teachers of other learning disabilities in inclusive and segregated settings.

Nearly 70% of teachers with ($M=3.86$, $ST= 0.394$) had fair awareness of some intervention strategies and readiness to include a student with ASD in regular classes and about 41.50% of respondents with ($M = 3.10$, $ST= 0.805$) held some preconceived views about individuals with Autism. In general, although more than half of the sample were aware of Autism traits and some classroom arrangements, teachers did not believe in their efficacy to teach a student with autism, therefore, teachers need to learn about the “ nature of Autism” to understand their students’ needs (Haimour & Obaidat 2013).

4.1.3.2. Meares Irlen Syndrome

(See Appendix 5)

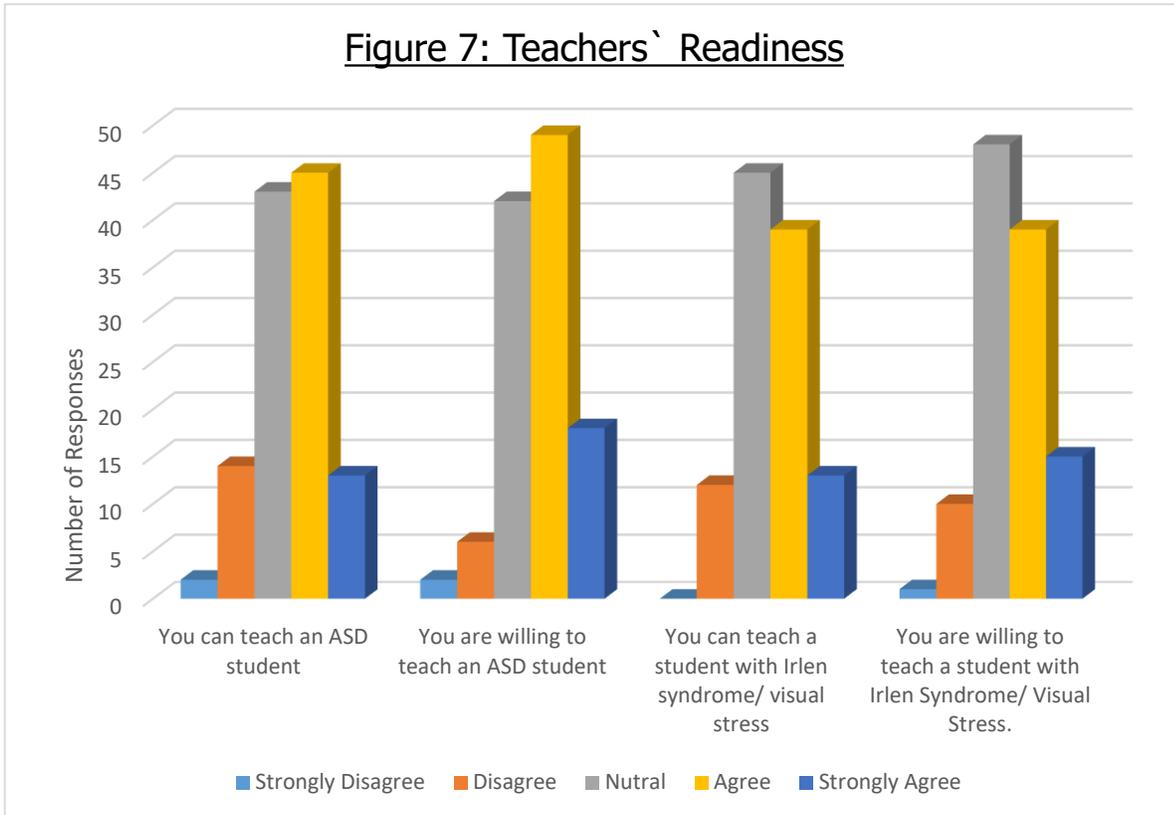
Less than half of the sample 41% believed that MIS is a neurological disorder. 61% were aware of MIS symptoms and 58.00% of them knew that students with MIS are sensitive to bright light while about half of the sample did not know that students with MIS are sensitive to black and white contrast of printed books and papers. Most of the teachers failed to realize that individuals with MID were not aware of their visual

problem. Further, less than 60% of teachers knew that MIS affect the student`s reading skills and less than 50% thought that it influences their behaviour and attitude towards learning. All in all, about 50% of the participants with (M=3.53, ST= 0.418) had an understanding of the main features of MIS. On the other side, about 50% of the sample with (M= 3.50, ST= 0.582) showed readiness and awareness of some necessary accommodation to include a student with MIS. However, around 36% of the teachers could not realize that this syndrome is easy to cater for in a regular classroom which might have an impact on their attitude. Around 47% were willing to teach a student with MIS and believed that they can teach one. Moreover, around 30% of the sample (M= 3.42, ST =0.480) had inaccurate knowledge about this case. Overall, although half of the teachers had a fair background about MIS, the other part lacked the appropriate knowledge that would help in the integration of students with MIS.

4.1.3.3. Teachers` Attitude

Figure 7 illustrates teachers` belief in their abilities and their willingness to teach students with Autism and MIS. The number of teachers who believed in their capacities to teach ASD students (58 teachers) was moderately higher than teachers who believed that they can teach MIS students (52 teachers). Similarly, teachers who were willing to teach students with Autism (67 teachers) was more than the number of teachers who were willing to teach students with MIS (54 teachers). Moreover, the number of teachers who did not believe in their efficacy to teach students with Autism and MIS was very low in comparison to those who were confident about their readiness and the

number of participants who were uncertain of their preparedness to teach MIS and ASD students was to an extent high.



4.1.3.4. Discussion:

Overall, the chart indicates that a good percentage of teachers were with including students with Autism and MIS in their classes and a minority were against it. This finding contradicts the findings of Scruggs & Mastropieri (1996) who suggested that a small portion of teachers were willing to practice inclusion in regular classes. A group of teachers could not decide if they were able to teach these two categories may be

because they lack knowledge or they do not believe in their efficacy which in turn would affect their attitude towards mainstreaming. Yada & Savolainen (2017) found that there is a modest relation between attitude and self-trust. They found that teachers who were confident of their abilities to teach students with special needs were less troubled about including them in mainstream classes and those who held neutral attitude towards inclusion and they were not sure about their potency to implement it in their classes and Geraldina (2016) found that many teachers opined that ASD students need to be included in regular classes, however, they believed that teaching them is a challenge due to inadequate knowledge and lack of training.

4.1.4 Analytical Tests of the significant differences

Two analytical tests were conducted to analyze the data obtained from the online survey. The One-way ANOVA and an independent T-test were done in relation to three categories. 1- Teachers` awareness of Autism and MIS symptoms and characteristics. 2- Teachers` awareness of some intervention strategies and readiness to teach students with MIS. 3- Misconceptions.

4.1.4.1 Teachers` awareness of the symptoms and characteristics of Autism and MIS

The One-way ANOVA test revealed no significant differences between teachers` awareness of the main features of Autism and MIS in regard to the factors (schools, age, and grade level). Whereas, the independent T-test demonstrated a significant difference between teachers` awareness of Autism characteristics and their gender, however, this factor won't be taken into consideration because female participants outweigh males` teachers. Moreover, the test revealed a notable difference between teachers` awareness of MIS characteristics and their prior knowledge of this syndrome with ($T = 5.773$ and $P\text{-value} = 0.000$) and a significant difference between teachers` previous teaching experience of this case and their knowledge with ($T = 2.739$ and $P\text{-value} = 0.007$). This suggests that teachers` knowledge of MIS features were influenced by previous experience in teaching a student with MIS.

4.1.4.2 Teachers` awareness of some intervention strategies and readiness to teach students with ASD and MIS

The One-way ANOVA test showed a significant difference between school (A) and other schools with ($F = 5.046$, $P\text{-value} = 0.003$) for ASD and ($F = 3.477$, $P\text{-value} = 0.019$) for MIS. It is worth to mention that only 9 responses were received from school (A) and most of these responses were done by special education teachers who are probably aware of the strategies used with ASD and MIS students which justifies this

finding and confirms Sanz-Cervera et al. (2017) findings that special education teachers have more knowledge about special education issues than general teachers and the findings of Haimour & Obaidat (2013) had poor knowledge of ASD. Furthermore, the Independent T-test uncovered a considerable difference between teachers' previous experience in teaching ASD students and their readiness to teach a student with autism with ($T = 2.763$, $P\text{-value} = 0.007$) another significant difference was between teachers' training and their readiness with ($T = 2.416$, $P\text{-value} = 0.017$). This finding is consistent with the findings of Scruggs & Mastropieri (1996) who reported that training influenced teachers' attitude. The test also revealed that teachers who had 16 to 20 years of experience showed readiness to include MIS students than teachers with fewer years of experience or those with more than 21 years with ($T = 2.710$, $P\text{-value} = 0.034$). Alhazo & Naggar Gaad (2004) and Unianu (2012) found that the more years of experience, the higher the acceptance of inclusion while Yada, Tolvanen & Savolainen (2018) found that teachers' with more years of experience are the least to accept inclusive education.

4.1.4.3 Misconceptions

Interesting findings were demonstrated by the one-way ANOVA test and independent T-test in regard to inaccurate views. The data showed a considerable difference between the four schools. Teachers' in schools B and E had more inaccurate opinions about Autism than teachers in schools A and C with ($F = 8.594$, $P\text{-value} = 0.000$) which might imply that teachers in schools A and C are aware of these cases more than

teachers in schools B and E, which suggests that there is no relation between the schools working experience and teachers' awareness.

Moreover, teachers who are teaching grades 1-3 and 4-6 held misconceptions about Autism more than teachers who are teaching grades 7-9 and 10 -12 with ($F= 4.964$, $P\text{-value} = 0.003$). Besides, teachers who did not teach a student with autism had more misconceptions than those who taught an ASD student with ($T = -1.663$, $P\text{-value} = 0.099$). Oddly, those who had training in this syndrome had more misconception than those who did not with ($T = -3.003$, $P\text{-value} = 0.003$), although the expected results are to have less misconception among teachers who had an autism training. Likewise, teachers who had MIS training had more misconceptions than teachers who did not receive any MIS training with ($T = -2.314$, $P\text{-value} = 0.023$). ‘‘The awareness about disability, the clarification of misconceptions and the elimination of bias is an important step leading to the inclusion of students with disabilities not only in the mainstream classes but also in their peer groups’’ (Louari 2013. p 700).

4.1.5 Teachers' Responses to Open Ended Questions in the Online Survey.

The online survey included two open-ended questions, the first question sought information about the barriers to inclusion in each school from teachers' perspectives and the second one sought teacher' opinion about the easiest case to cater for. About 53 teachers answered the questions. Below is a review of the keywords and categories that emerged from teachers' responses.

Q1. In your opinion, what are some barriers to inclusion in your school?

The answers to this question revealed 20 barriers to inclusion in the four private schools` of the study. The barriers are students teachers ratio, lack of proper resources, training, teachers` attitude, lack of parents cooperation, stimulations in school environment , teachers` readiness, lack of specialized staff, facilities for accommodation, lack of qualified teachers, assistive technology, fund, administrative support, curriculum, peer pressure due to cultural boundaries, behavioral issues, language barrier, school lighting system, SEND department support, and adequate time to plan. Some of these barriers such as time to plan, training, resources, and class size were previously identified by (Scruggs & Mastropieri 1996) and recently Young, Mannix McNamara & Coughlan (2017) referred to the relation between resources and training and teachers` views towards mainstreaming.

Moreover, Robertson, Chamberlain & Kasari (2003) also found that teacher, students with special needs, peers, and school environment are factors to the success of inclusion.

Q2. Which learning difficulty is easier to cater for in a regular classroom

(Autism or Irlen Syndrome)? Why?

A total of 62 teachers out of 117 responded to this question. About 18 teachers believed that Autism is hard to cater for while 29 teachers thought that teaching MIS is harder than teaching ASD students. Further, 10 teachers were not sure because they did not

teach students with these cases and 4 teachers believed that both cases are hard to cater for, while 1 teacher reported that the severity of the case determine it.

4.2 Qualitative Data Findings

The qualitative data was derived from two instruments, the reflective questions which aimed to examine teachers` cogitation upon teaching a student with ASD or MIS, and the other tool was a group of interviews intended to examine the role of special education department in facilitating the inclusion of these two cases and supporting their teachers.

4.2.1 Reflective Questions

Wlodarczyk et al. (2015) pointed to the importance of reflecting on one's experience as a means of “ personal growth” and a way to convert an individual's mindset. Thus, a series of questions were put forward for teachers to reflect on. A total number of 13 participants responded to the reflective questions. 5 teachers reflected on their experience with MIS students, 6 teachers wrote about their experience with ASD students, and 2 more teachers wrote about their experience in teaching both cases. Participants` working experiences varied between 3 years to 20 years, 8 of them had less than 10 years of experience. 6 participants were elementary teachers, 6 were secondary teachers, and one teacher did not specify the grade level she/ he is teaching. A review and a summary of teachers` responses to each reflective question is provided in this section.

Question 1: Do you have any previous background about this/ these cases (Autism/ Irlen Syndrome)?

a. If your answer is ‘yes’, how did you learn about it?

b. If your answer is ‘No’, what did you do to educate yourself?

Based on teachers` responses, 6 teachers out of 8 had a prior knowledge about ASD and 4 teachers out 7 had a background about MIS, which leaves 5 teachers who are expected to support students with special needs in regular classes without prior knowledge about these cases. Two teachers learned about the cases they are teaching from their students. Teacher C2 wrote *‘From the student that I am still teaching him.’* and teacher A2 wrote *‘University, interaction with students in class’*. The rest of teachers enumerated different sources of their knowledge about autism and MIS such as university courses, parents, workshops at schools, online reading, social media, postgraduate studies, lectures, cooperation with special education department, and one participant obtained her knowledge about autism when she was working with a voluntary organization and visited Dubai Autism center. In short, only 3 teachers sought to educate themselves through reading online resources or contacting the special education department.

Q2. Reflect on your experience teaching this particular SEN student in your class over the course of the first term or last year.

Teachers` responses varied. Some experiences were positive. For example, B1 a second grade classroom teacher and a mother of a special need girl stressed on the importance of inclusion for the benefits she witnessed on her ASD student through interacting, socializing, and imitating her peers, however, she believed that the presence of a shadow teacher is crucial *‘I think without her shadow teacher, she will affect her friends` attention by doing some sounds, her shadow teacher helps me to keep her fully concentrated.’* Similarly, B3 a grade 4 teacher believed that inclusion increased her ASD student self-confidence and improved his social relations with others.

Teacher E2, found no difficulties in including her ASD student in class because he has good social skills and is usually attentive during the lesson. Also, Teacher E5 a grade 9 teacher noted *‘The student is very respectful, most of the time eager to learn. He has some difficulties with critical thinking questions’*. Teacher C1 who had experience with both disorders wrote *‘At the beginning of the year I did a baseline assessment for the student and I highlighted her weak points, after that, I made a special program to support her and I achieved my goal at the end of the year.’*

Conversely, some teachers had a different experience, teacher A3 believed that including an ASD student is harder than MIS student. Teacher C2 reported that *‘The student finds it difficult to adapt to the educational process in the classroom in terms of participation and completion of the activities required of him, taking twice the time to finish one activity and also does not like to read to his colleagues’*, and teacher C3

wrote *“ Sometimes he has mood swings and does not want to work at all. It's difficult for him to understand the long sentences ”*.

Even teacher B2 an elementary math teacher commented that *“ It was challenging at first without proper teacher training for SEN students ”*, and teacher E1 who has 12 years of experience found the inclusion of the MIS student a bit challenging as she needed to design some lessons to meet his level and to use multiple online resources to simplify the lesson for him. Teacher E3 reported that *“ He was very restless in class. Quiet often left his glasses at home. It was not easy getting his attention to finish his work ”*, and teacher E4 wrote *“ The student gets angry very quickly and argues with the teacher and other students and sometimes refuses to cooperate ”*.

Q3. What were your biggest challenges and how did you overcome them?

Teachers recounted a group of challenges in teaching students with ASD and MIS.

Many teachers considered the distributive behaviour and noises made by ASD students a big challenge. According to Teacher A1 *“ The most difficult challenge is the disruptive voices during the lesson. In this case, she puts headphones to listen to her favourite music or sending her out of class for a break ”*. Some teachers stated that involving ASD students in group work activities was hard in addition to their attention deficit. Teacher C2 found that finishing classroom activities, writing tests, participation and interaction with classmates were the main challenges in teaching ASD students and that by modifying his activities and tests and by pairing him with one or two students

she was able to overcome these challenges. Further, teacher E5 reported that his student *“sometimes complains about the noise level in the classroom which makes me sorry for him.”* and added that he needs to re-explain critical thinking questions in a simplified way which might create chaos in class because other students take it as an opportunity to chat with their classmates and according to him *“ I cannot allocate enough time to him due to this reason”*, especially that there are two more SEND in the same class.

Teachers of MIS students also listed a group of challenges and they were poor attention and concentration, the inability to collaborate with classmates or performing tasks quietly and the stressful classroom environment. Teacher A2 remarked *“ MIS student wasn’t able to collaborate with classmates or perform the tasks quietly”*. Likewise, teacher B2 who listed three problems and ways she used to overcome them: 1- Poor attention and concentration and was solved it by reducing the work and one to one coaching. 2- The stressful classroom environment and she seated the student near his friends to reduce his anxiety. 3- Activities that require copying and assignments were printed on green colour papers. Teachers B3 engaged her MIS student in class activities with the help of his classmates. As for teacher E3, *“ Biggest challenge was to make him understand Mathematical concept. If he didn’t understand quickly, he won't then pay attention in class. So I would sometimes keep him in the break to explain separately”*, and teacher E4 wrote that *“The student gets angry very quickly and argues with the teacher and other students and sometimes refuses to cooperate”*.

Q4. What are some ways or intervention strategies you used to teach your student more inclusively?

Most teachers stressed on the importance of taking into account students` differences and assigning suitable activities such as visuals, learning by play, learning buddies, short questions, less writing tasks, assistive technology, word cards with pictures, and collaborative learning. Teacher B1 tried to build a positive relationship with her ASD student through questions about her feelings and by encouraging her to role play as a little teacher. Teacher C3 used positive feedback, she sat expectations and shared them with her student, in addition to the assistant teacher, and parents` cooperation. Moreover, teacher E5 commented ‘ *Whenever I have chance to go to his desk, I try to explain to him and his shadow teacher. I also get feedback regularly from his shadow teacher*’. Likewise, teachers of students with MIS also highlighted the vitality of the individual differences and mentioned some strategies such as visual aids, colored papers, seating the student close to the teacher and the smartboard with an angle that will not increase the stress in his eye, online resources, collaborative learning, learning by play, and in some cases teachers allowed the student to express in drawing rather than writing. Teachers E1, E3, and E4 mentioned that they designate some of their time for one to one teaching.

Q5. How do you assess your student's academic progress?

This question was answered from two different perspectives according to teachers` understanding. 7 teachers Out of 13 mentioned the academic progress their students made which was slow except for teachers C1 and B1 who touched a big progress, especially in mathematics. Whereas the rest of teachers wrote about the strategies they used to assess their students` progress. The following strategies were mentioned by the teachers:

- Student`s participation
- Activities completion
- Modified assessments
- One to one sessions
- Short questions after every lesson
- Regular reading sessions to monitor reading fluency
- Modified formative and summative exams

Q6. What type of support that helped you to meet your SEN student's needs?

Teachers agreed on some common points such as:

- Shadow teachers and learning support assistant.
- Parents` support
- Visual aids and the required coloured papers for students with MIS.
- HOD`s support.
- Communication with the school's psychologist and also with the social worker.

- Training courses from the special education department.
- Support from the special education department
- Students studied in small group

An interesting comment from teacher E1 was ‘‘ *I actually did not receive any support from anyone*’’.

Q7. What other type of support you think would help you to teach him/ her more inclusively?

The majority of teachers expressed their need for additional support, their responses to this question were more detailed than the previous question. The extra support they needed ranged between providing the students with shadow teachers, providing teachers with appropriate training, special reading classes, more resources, and more support from parents’ side. Teacher B2 called for ‘‘ *More MOE supports to train teachers and special extracurricular activities for students inside the school*’’. Teachers A2 and B1 wished to tailor training for each case separately because each student and each case has a different need. Other teachers expressed their need to be trained on strategies to design more appropriate and various activities, how to ask appropriate questions, and ways to encourage and challenge their students. Teacher C1 who works in a school following the British curriculum wished to design a special curriculum for the students with exceptional needs. As Young, Mannix McNamara & Coughlan (2017) highlighted the value of dealing with teachers’ apprehension in regard

to training and resources they need to help them construct an inclusive environment in their classes.

Q8. Have your views of inclusion changed after this experience? How?

12 teachers out of 13 held a positive attitude to the concept of inclusion after their experience in teaching students with special needs except for teacher A1 who commented “ *I have not changed I find it difficult to include SEN students*”. Some Teachers noticed the positive impact of inclusion on their students who became more social and acquired confidence to deal with others without hesitation and fear. Teacher B1 commented, “ *Yes, before I thought that students with special needs need to be separate but after this experience I am sure they must be integrated but with some conditions such as a shadow teacher, school and parents help and teacher understanding of the case*”. Further, several teachers commented that they learned from this experience like teacher E4 “*Yes, this experience taught me that every student has potential. It is possible to reach their full potential through effective and differentiated education*”. Teacher E2 reported “*I understood the importance of inclusion in the classroom. By teaching my student, I was able to apply my teaching expertise in a better way in order to maintain an inclusive learning environment*”. Moreover, teacher C2 responded “*Yeah, every student, regardless of the difficulties, is entitled to deal with and learn with all types of students so that the student can meet the challenges in the future*”. This confirms Melekoglu (2013) who stated that the

interaction with exceptional learners would shift educators` attitude toward people with special needs and make them see the potentials in their students

Q9. Do you think that the statement “ No child is left behind” is effectively implemented? Why?

Most responses to this question were negative which indicates that teachers believed that students` needs are not met as they are supposed to. Some teachers blamed the special education department and others attributed that to a large number of students in a class and to time constraints. Teacher C2 believed that teachers` cultures and attitude to deal with special education learners, their knowledge and awareness of their students` abilities, their experience in teaching such cases, and the number of learners in one class would influence the inclusion of special need students. Teacher C1 had a different point of view “ *No because not all the schools like to have students with special needs*”. Teacher B2 commented “ *I strongly believe in that statement “ No child is left behind” . It is teamwork of an educator, SENCO, social worker with proper regular instructions, suitable staffing, accommodation, modified curriculum, standardized assessment for Irlen students will show a significant improvement which will prove that no child is left behind in learning*”. Finally, it is important to take teachers` views into consideration because they are in direct contact with those students. Thus, if they do not think that all students are well catered for, then further measurements have to take place.

4.2.1.1 Discussion of the Reflective Questions Findings

Teachers` responses to the first question raised concerns about the readiness of some teachers to teach students with ASD and MIS and the quality of knowledge they have about these two cases. Even if they have the knowledge, it does not necessarily reflect their readiness to effective inclusion (Sanz-Cervera et al. 2017). This can be touched from their responses to questions 2, 3, and 7. Thus, schools are required to provide their teachers with appropriate training. Geraldina (2016) argued that training teachers would increase their understanding and proficiency to educate students with Autism. Accordingly, training will help teachers to support students with different needs. As for the second and third questions, one can conclude that many teachers saw a positive impact on their students, however, to most of them the experience was a bit challenging. They found students` behaviour and engagement a challenge. Robertson, Chamberlain & Kasari (2003) found that the challenging behaviour of ASD students determines their relationship with their teachers and impacts the social future of students with autism and on inclusion in general. They added those who believed that they can manage their students' behaviour were more positive to the notion of inclusion. Moreover, teachers of students with autism were able to list a variety of strategies they used with their students unlike teachers of MIS students. It seems that the attention given to autism as was mentioned previously in this paper over MIS is reflected on teachers practice inside classrooms.

As for question 6 about the support provided to help them teach inclusively, teachers` answers were discreet. They mentioned general points that did not reflect the effect of

this support on their performance in class. Meanwhile, when they were asked about the support they need, they listed a considerable number of the expected help. The key point that most teachers agreed on was the need for frequent training, however, they wanted effective training that focuses on each case separately and equips them with more practical strategies and techniques that would help them in an inclusive setting. This might stem from their feeling that they are not capable enough to teach their students. Chhabra, Srivastava and Srivastava (2010) opined that educators need assistance from different school staff to create an effective learning setting because they do not have trust in their efficacy to teach typical and special education learners, therefore, more dynamic support is required. According to Unianu (2012) although teachers believe in inclusion as the students' right, some type of stigmatization still exist and that might be because teachers are not aware of the distinctive attributes of students with special needs which require the support of different school personals and Porter (2008) argued that supporting teachers will lead to an effective inclusive education for all their students. Apparently, most of the teachers' responses to question 8 reflected a positive attitude towards inclusion. Teixeira De Matos & Morgado (2016) found that teachers held favourable views on teaching learners with diverse needs in regular classes and were concerns that this inclusion might not be fully authentic. To sum it up, this tool provided an in-depth understanding of teachers' view on the inclusion status in their schools and reflected their beliefs of inclusive education as a concept and as a practice. It mirrored teachers' acceptance of the idea of inclusion and

raised some concerns about their preparedness to take their students a step forward. It also reflected the quality of the support they obtained from their schools.

4.3. Semi Structured Interviews

One of the most important objectives of this research is to identify the type of support provided by special education departments for teachers and their special need students. Four interviews were done with a representative from the special education department in each school to help gain answers for the research question ‘What role does special education departments play to support the inclusion of students with Autism and MIS in regular classes?’. That data gathered from the interviews had been reviewed several times to understand and then to document it (Flick, Kardorff & Steinke 2004). The raw data that was collected from the interviews was transcribed, organized and narrowed to meaningful themes. Berg (2001) stated that the unrefined qualitative data has to be managed and polished to be easy to interpret and to identify themes and patterns. Therefore, this section summarized the key ideas derived from the interviews.

4.3.1. A General Background

School A is a private school in Dubai. It offers the American curriculum. It is open for about twenty years and has about 2266 students at the foundational level to grade 12. The special education department provides services to 85 students. 34 students are in the elementary and KG department. 6 students are on the Autism spectrum disorder. 4

cases are severe and 2 are moderate. Three ASD students have shadow teachers. The school has 15 students diagnosed with MIS. 8 of those students are in grade six.

School B is an American curriculum school in Sharjah. It started its journey five years ago. The approximate number of students is 2500 students. It has 3 students with Autism and 2 students with MIS syndrome. The schools` journey with inclusion started last year and the department is led by a psychologist.

School C is a private school in Dubai offering the National Curriculum for England from age three to eighteen. The average class number is about 20 to 24 but in certain subjects like math and science, the numbers are smaller than that because the topics are more demanding.

The approximate number of students enrolled in school is about 2000 students. The total number of students with autism is 6 students. Although the school does not have any recorded MIS cases, it has about 26 students with dyslexia. According to Kriss & Evans (2005), a high percentage of dyslexic students might have MIS. Which means that there is a probability that some of those 26 students might have MIS and they are not picked up.

School E is an American curriculum school in Dubai. Over 1000 students are enrolled in the school. The special education department caters for about 62 students with several learning difficulties. Among these cases are two male students have MIS and learning difficulties. They are fully included in regular classes. 17 students are on the Autism spectrum. 16 males and one female student. 9 of them are fully included in

classes and 7 severe cases attending segregated classes within the school's campus and are catered for by special education teachers.

4.3.2. Interview with KG. and Elementary Coordinator in School A

The coordinator started explaining the identification process which usually begins with a class observation by the SEND coordinator based on a referral by the teacher. The department uses the Woodcock-Johnson Tests of Cognitive Abilities to assess the referred students. Then the school seeks parents` consent for further assessments. If parents refuse to cooperate due to the extra expenses, the task is left to teacher`s intervention in class. The school usually does not return the admission of any special need student unless there is no place *'' If we will take a child who has any disorder, we need to get a plan for him and he will need teachers, classes and we don't have all this''*.

The department has four plans. The first plan supports student in class by modifying exam papers or by reading the questions. *'' They just need a differentiated curriculum with IEP with a follow-up but they don't need co-teaching or pull out sessions''*. Plans 2, 3, and 4 focuses on the number of times the student is pulled out of the regular class. She added *'' We don't prefer to pull the child out you know that our school is inclusive so sometimes we pull the child out with another child so they will be like a small group.''*

Two assessments are carried out during the year, at the end of the first and second terms to measure students` progress after the intervention and decide if any other interventions are required.

According to her, a severe autistic female student in grade five was in the school since grade 1. She had 90% of her lessons in segregated settings. This year, she attends about 70% of the lessons with her peers. *“ Our challenge with her was the Arabic language but this year she started to attend even in the Arabic with her classmates two times per week and she started to participate”*.

The department is planning to have a sensory room for ASD students for occupational therapy, but this plan is postponed because of the limited space. She noted *“In our department, all our students are getting what they need but we are a very big school. Some cases may need more support and we are still working on this”*.

When she was asked about the support provided for teachers she talked about workshops. These workshops provide guidelines and ways to deal with special need students, but there was no specific training for Autism or MIS *“Every year the head of the inclusion department does a workshop for all the teachers even the assistants but you know we will still have this challenge. Some teachers will say I don`t want SEN students in my class because I don`t have experience and I don`t know how to deal with them”*.

Part of the support provided for teachers is *“ All About my Student”* , in which the department shares all the information about the students` case, areas of concerns, how to communicate, engage, and reinforce the student. In addition, the curriculum is

modified for ASD students and in some cases, it is totally changed to suit the student's needs. She noted that the department is ready to provide teachers with the resources they need and answer their questions, but it is very rare to have a creative teacher who is able to support students with exceptional needs.

4.3.3. School B Interview with School Psychologist

Several appointments were scheduled to conduct the interview with the school psychologist, but because of her busy schedule, she asked to answer the interview questions in a written form. According to her, the school is willing to enroll students with ASD and MIS and provide them with the best possible in class and outclass support along with accommodation and modification. The special education department along with teachers *“Observe the students with special education to make sure they are academically, socially, and emotionally sound and then proceed to follow up in order to make sure they continue to flourish.”*

To support teachers, the department shares the intervention strategies through one to one sessions or group discussion based on the case. Then an IEP is prepared and teachers have to decide and write the specific goals for their students to achieve and focus on. The main focus for MIS students is on the seating plan, the coloured papers, frequent breaks, and extended test time. The teachers modify the test papers by reducing the number of questions or the number of multiple-choice questions or by simplifying the test instructions. Further, *“The lesson plan is designed to cover the main four categories. High achievers, middle achievers, low achievers, and SEND”*.

Also, the department provided several workshops about learning difficulties in general without a specific focus on Autism and MIS.

4.3.4. School C Interview with Secondary Special Education Teacher

The special education department in school C has several policies for the students, parents, and educators, in addition to policies for the wellbeing and safety for the staff. There is no approximate number of students in the special education department. The department decides how many students to accept according to their difficulties. When she was asked about the identification process in the school, she responded

“ We do not identify as educators even if we are qualified. First and at most we make sure the child is safe if we observe that there is an incident happening, we are all trained and qualified to see the first signs but it is not our job to identify, the first thing we do is to make sure the child is safe and nurtures and we have to report this to the staff member that we need to report to, to our line manager, our safe guardian, and it is their duty to see and follow the path of how this will be handled and identified”. The department makes a profile for each special need student based on their medical report *“The department then makes a quest which is like a child profile (Appendix 6), it will be on the system and it will be marked with different colour and with a different sign on the system. So, every time a staff logs into the register will see next to the student's name a sign to be aware that this student has a special need. Then teachers will come to the SEND department to tell them how to approach this child, how to teach him, how*

to differentiate the work and inform them if the student has any other physical difficulties.”

According to her, the school and the national curriculum are demanding. *“ I do not believe that it is possible with the GCC exams that we need to follow, I do not believe that it is very possible to differentiate the work a lot for these students, so I do not believe that all students can follow the GCC exams. I do not believe a child with severe autism can achieve good scores and he or she will be demotivated when they sit for the exam, but we do our best to support them with their studies. The curriculum is not so interactive and a child with identified autism and nonverbal might have big challenges following the curriculum.”*

The school has students with Autism and with visual impairment but not diagnosed with visual stress. It had a student who needed special coloured papers last two years but he left the school. All the autistic students are in the primary because it has a department that is specialized in Autism except for one female student in the secondary. When she was asked about the reason of having one ASD student in the secondary level, she responded *“ Secondary is very demanding so it is not going to be easy for a child who attends secondary to be identified with autism, right now we have one though and she is attending the school”*.

The second part of the interview discussed the assistance provided to teachers. The department helps teachers by organizing for regular trainings to explain how to include those students in regular classes. It supplies them with resources and materials. The

department even shows them how to differentiate their instructions. She said, *“ It is not a matter of denial, it is the department duty to support the teachers, we have an open door policy for the teachers to come to ask specific questions, and discuss their worries and there are designated qualified assistants and teachers that will be within the class to support these students and other students in need as well as the teachers on ways to adjust their lessons so this student can follow with the rest of the class.”*

The training focuses on the cases registered in the department. The training targets the symptoms and signs they should see in students to ensure their safety. It explains how these students respond to instructions and how they respond to learning this happens at least once a month. All staff members are involved in the training because *“ Anything can happen during lunch time and staff members need to be aware when there are severe cases in the school “*.

The training is arranged by the special education department and not external providers *“ That means spending money. This is a profit school. There is no specific training because there is no budget for that”*.

A third point that was examined in the interview was the intervention strategies. She reported *“ No modification or accommodation for autistic students, the student is in class and there is another adult to help in the class. The whole point is for the students to be part of the community, the students need to feel that they are not doing something different than anyone else. The lesson will be the same. The task will be similar but differentiated. It will be in a lower level or with additional vocabulary or additional instructions, but the assessments are always the same. The only thing they receive is*

extra exam arrangements which mean extra time in a private room it is not possible to change anything in the national curriculum. Because students will sit for the GCC exams at one point.’’ According to her, ‘‘ Not all teachers are trained, teachers need to be more trained in order to have in their classes students as such. It is not the majority of the teachers and also within the support learning department it is not the majority of them who are qualified, yes, of course, they are inclusive, yes, of course, the school has means to support those students but further training needs to take place.

‘‘

4.3.5 School E Interview with Special Education Coordinator

The first part of the interviewee discussed the identification process in the school which begins with a referral form filled by the teacher, then the department looks at the referral reasons and the intervention the teacher had already implemented. The coordinator observes the student in the class, get the teacher and parents` feedback, and see the student's work. She said, *‘‘ Parents must give their consent for any type of intervention.’’* *If parents refuse any action to be taken, the teacher is responsible to aid this student in the class’’. She added ‘‘ The SEN department will not be providing anything yet because there is no consent from the parents, but since they are not in the list, accommodation and modifications will be limited because we don’t have any evidence to justify the things that we do because at the end of the day it can backfire us. The department keeps documenting things and continuously meet with parents. We have a lot of experiences where the child has been identified at grade 1 and then the*

parents only pushed for some therapy or assessment when the child was at grade 5 or 6.”

The school has four waves of intervention. In wave one, teachers conduct the interventions. In wave two, the SEND department intervene either by a pull-out or a push in sessions. The fourth wave includes students with severe cases who cannot be fully integrated into regular classes and at the same time, *“We don’t want to deny any admission. But it will be hard for the teachers to deal with them even if they have a shadow teacher because the curriculum should be totally modified. So most of the days they are in special education rooms and the extra other co-curricular subjects like art, music, and PE with typical students.”*

Teachers` support starts by class visits to identify strategies that would support teachers and students. Teachers` training focuses on the case itself. The school arranged training about ASD and MIS. The MIS training was four years ago and was organized by the MIS students` parent. Recently, the department tried to arrange for another MIS training, but the trainer apologized for her time constraints.

One more point that was discussed was the intervention strategies. The modification provided to each case depends on the students` needs. High functioning autism students are academically good so they don’t require modification. It is just managing students behaviour. Some cases of autism require curriculum modification. The special education department along with teachers and parents sit together to agree on the modification. Some topics might be cancelled or the activities are lowered to meet their levels. According to the interviewee, *“MIS students do not need much modification as*

long as they use the correct tinted glasses. The MIS student in elementary had issues like a severe learning difficulty, even his reading is affected and there was also behaviour concerns. When he was diagnosed during the two month holiday he came back withI was so amazed as if I am introduced to a different child. Previously I could never get a good interaction with him. When he came, he was in grade 2 then, he was diagnosed during the holiday and came back to grade 3 and it is like I meet a totally different person. Behaviour issues were also addressed''.

The arrangements provided for MIS students are based on the student's screening report. They include pull out sessions, changing the text font, size, the compact, and the space between the lines. Students are seated away from the smart board because of the glare and away from the window because of the sunlight. The assessments for each case differ. For MIS students the test paper is modified and the exam portion is reduced. While ASD students are provided with a template, or do the test through several sessions or in a separate room.

4.3.6. Interviews Discussion

Overall, the 4 schools almost followed a similar identification process. While the support system, intervention strategies, and training differed. The interviewee listed some ways of support such as resources, field visits, students` profile, and special education assistants in school C. Teachers` trainings in schools A,C focused on educating teachers about their special need students and ways to include and support them in classes while school E carried out training about the nature of each disorder.

In school B, it was hard to deduce clear arrangements that would help teachers in their classes and most of the points that were mentioned by the head of the inclusion department relied on teachers' efforts. In schools A, B, and E. the curriculum and assessments are modified, meanwhile, special education students in school C have to follow the same curriculum and sit for the same assessments, which might result in implicit exclusion to some students' categories. Another issue that was raised by some interviewee was teachers' attitude and qualification. By analyzing interviewees responses, teachers' reflections and teachers' answers to the survey question "What is the main barrier to inclusion in your school?" several points can be concluded. First, there is some type of mistrust between teachers and special education staff in terms of qualifications. Second, teachers believed that they need more training, which might indicate that they are not satisfied with the training provided by the special education departments. Third, some teachers might consider class visits, modifying tests and curriculum, filling documents as an extra workload, one teacher noted " *I will not refer a student to the special education department because it is mainly more paperwork. I have experience and I know how to deal with my student, so I don't need more work.* "

4.3.7. Summary

Around 117 teachers took the online survey to explore their awareness and attitude towards inclusion in general and the inclusion of students with Autism and MIS in particular. 13 teachers wrote about their experience in teaching one or both of these cases. Further, 4 semi-structured interviews with an individual from the special education department was done to explore the support teachers receive to help in the inclusion of these two categories. In brief, more than half of the teachers had fair awareness of Autism and about half of the sample were aware of MIS. The number of teachers who were willing to include an ASD student was more than those who were ready to teach a student with MIS and a group of teachers had concerns about their self-efficacy to teach these cases. Moreover, most of the teachers expressed their need for further support to help them teach more inclusively.

5. Chapter Five: Conclusion

The purpose of this study was to identify teachers' position towards the inclusion of students with ASD and MIS in regular classes in 4 private schools in the UAE. This study utilized several approaches to data collection and grouped them together. The first approach was an online survey that aimed to examine teachers' knowledge of the main traits and classroom supporting strategies in addition to identifying some inaccurate ideas teachers might have about these two disorders. The second tool asked teachers to write their opinions about their experience in including students with ASD and MIS in mainstream classes. The third tool was Semi-structured interviews to inspect the support provided to ASD and MIS students and their teachers. The data revealed that teachers' knowledge of Autism was more than their knowledge of MIS, a greater number of teachers reported that they can and are willing to teach an ASD student than a student with MIS. Further, teachers who thought that the inclusion of MIS students is harder than ASD were more than those who believed in the opposite. Furthermore, the number of teachers who had training in Autism was higher than the number of teachers who had training in MIS bearing in mind that around 69 teachers out of 117 did not receive training in Autism and 93 teachers are not trained in MIS. This finding reveals that there is a persistent need for formal training to enable teachers from teaching students with these two issues. Geraldina (2016) found that many primary teachers lacked an understanding of students with Autism due to poor training and insufficient symposiums that would help in shifting teachers' perception. Further, Haimour & Obaidat (2013) assured that all teachers need to be educated about ‘

educational practices” to be able to support their special need students and Heine, Martin & Shields (2016) noted that teachers would help in improving the life quality of MIS students and serve them efficiently if they are aware of their needs. Thus, training is a powerful tool to increase teachers` awareness. Unfortunately, three out of four schools provided general training for their teachers. Teachers` training needs to include information about the characteristics of individuals with ASD and MIS to help teachers understand the implication of these cases on their students` learning and behaviour. Symes & Humphrey (2011) stated that many individuals found the training about Autism not useful.

Additionally, half of the sample believed that ASD students need to be taught in special classes by special education teachers which suggest that there is still a misunderstanding of the meaning of inclusion. On the other hand, teachers` responses to the survey`s open-ended question and reflective responses disclosed that teachers were positive to the concept of inclusion, however, they called for additional support that would enhance the implementation of inclusive education. It seems that the support provided by special education departments did not meet most of the teachers` needs. To sum it up, authentic and powerful inclusive education has to overcome lots of obstacles (Geraldina 2016).

5.1 Implications and Recommendations

This paper provides useful data which can serve as a basis for further research. The outcome of this research would not be the generalization of the result obtained, it rather raises awareness to improve teachers` pre-graduate programs and improve the quality of in-service teachers training to enhance the positive attitude (John, Knott & Harvey 2017). School managements need to establish a system that allows teachers to plan and collaborate towards inclusion without time constraint especially that there is uneasiness about the time allocated for teachers to plan together for their ASD students (Symes & Humphrey 2011).

5.2 Limitations

The present study has some limitations that should be considered. The first limitation is related to the small sample size which might affect the generalizability of the findings. The total number of participants in this research is considered very small compared to the number of teachers working in private schools in the UAE. Another limitation is participants selection. As the sample was exclusively from the emirates of Dubai and Sharjah, the results cannot be generalized to other emirates. It would be interesting to include participants from the seven emirates in future studies to try to generalize the results across the country. In addition, the sample was not sufficiently heterogeneous. The recruited teachers for the online survey and reflection questions were from different demographic backgrounds which could have affected the findings of the survey. Another problem confronted this research is the lack of data and

verified resource about MIS cases in the UAE. Another restriction has to do with the survey used to evaluate teachers` knowledge and attitude of ASD and MIS. The survey consisted of 40 closed response scale items, which might not reflect an accurate picture of teachers` knowledge and awareness.

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Appendices

Appendix 1 (Online Survey Instrument)

A Survey Instrument

The Inclusion of Two Learning Difficulty in Mainstream Schools

Thank you for taking part in this survey that is designed as part of my dissertation fulfilment. I am conducting a research to explore the inclusion of two learning difficulties in mainstream schools (Autism Spectrum Disorder and Irlen Syndrome/ visual stress).

The survey should take approximately 10 minutes to complete. Your response to this survey is voluntary and your answers will be kept strictly confidential.

Note: Several terms are used to refer to Irlen syndrome. Example: Scotopic Sensitivity Syndrome, Visual Stress, Meares Irlen Syndrome, and Visual Discomfort.

Part 1 : Demographic Information

For each question, please check the box of the item that best describes you.

1. Demographic Information	
For each question, please check the box of the item that best describes you.	
1.1	What is your gender? <input type="checkbox"/> Male <input type="checkbox"/> Female
1.2	What is your age? <input type="checkbox"/> 21 to 30 <input type="checkbox"/> 31 to 40 <input type="checkbox"/> 41 or more
1.3	How many years of teaching experience do you have? <input type="checkbox"/> 1 to 5 <input type="checkbox"/> 6 to 10 <input type="checkbox"/> 11 to 15 <input type="checkbox"/> 16 to 20 <input type="checkbox"/> 21 or more
1.4	What grade levels do you teach? <input type="checkbox"/> 1-3 <input type="checkbox"/> 4-6 <input type="checkbox"/> 7-9 <input type="checkbox"/> 10-12
1.5	Do you know what is Autism Spectrum Disorder? <input type="checkbox"/> Yes <input type="checkbox"/> No
1.6	Do you know what is Irlen Syndrome/ Visual Stress? <input type="checkbox"/> Yes <input type="checkbox"/> No
1.7	Have you ever taught a student with autism ? <input type="checkbox"/> Yes <input type="checkbox"/> No
1.8	Have you ever taught a student with Irlen Syndrome/ Visual Stress? <input type="checkbox"/> Yes <input type="checkbox"/> No
1.9	Do you have the necessary training to teach a student with autism? <input type="checkbox"/> Yes <input type="checkbox"/> No
1.10	Do you have the necessary training to teach a student with Irlen. syndrome. <input type="checkbox"/> Yes <input type="checkbox"/> No

1. Autism Spectrum Disorder		Strongly Agree	Agree	Uncertain/ I don't know	Agree	Strongly Agree
1.1	Autism is a neurological disorder.					
1.2	ASD is more common in boys than in girls					
1.3	ASD students always have high IQ and do well in Mathematics.					
1.4	ASD students are engaged in repetitive and restricted behaviour.					
1.5	ASD students have social and communication impairments.					
1.6	ASD students are literal, do not understand figurative language.					
1.7	ASD students always have learning difficulties.					
1.8	The comprehension difficulties demonstrated by ASD students is a result of cognitive deficit					
1.9	ASD students need more time to process spoken language.					
1.10	Stimulations such as sounds, smells, textures, and lights might cause tantrums or meltdowns					
1.11	They are visual learners					
1.12	ASD students benefit from routine and reminders before transitions.					
1.13	Teaching ASD students requires emotional and physical effort than other students.					
1.14	They are capable of learning.					
1.15	ASD students need to be educated in special					
	classes by special education teachers.					
1.16	A shadow teacher is important to include an ASD student in a regular class.					
1.17	Assessment accommodation could be small-group or private testing.					
1.18	You have an understanding of the autism spectrum.					
1.19	You can teach an ASD student.					
1.20	You are willing to teach an ASD student.					

2. Irlen Syndrome/ Visual Stress/ Scotopic Sensitivity		Strongly Agree	Agree	Uncertain/ I don't know	Agree	Strongly Agree
2.1	It is a neurological condition causing an over-active brain.					
2.2	Some of the symptoms are eye strain, headache, migraines, and text distortion.					
2.3	Students with Irlen syndrome are not aware of their visual impairment.					
2.4	Students with Irlen syndrome are sensitive to bright light, fluorescent lighting , and glare.					
2.5	Students with Irlen syndrome are sensitive to black and white contrast of printed books and papers.					
2.6	A thorough examination by an ophthalmologist / optician can assess this case.					
2.7	It can be treated by regular eye glasses.					
2.8	Students with Irlen syndrome have learning difficulties because of their low intellectual capacity.					
2.9	This syndrome causes reading difficulty and poor reading comprehension.					
2.10	It affects math computation,					

	handwriting, copying, and even listening.					
2.11	A gifted and talented student can have Irlen Syndrome.					
2.12	Reading speed, accuracy and comprehension always improve by using overlays or tinted eye glasses.					
2.13	An accommodation would be the use of natural light and / or caps and visors in class.					
2.14	A student with Irlen syndrome can have dyslexia.					
2.15	The effects of this syndrome are easy to cater for in a regular classroom.					
2.16	Improving students` phonological awareness always help to overcome this problem.					
2.17	Changing documents format is one type of accommodation.					
2.18	This difficulty causes behavioural issues and/ or lack of motivation in class.					
2.19	You can teach a student with Irlen syndrome/ visual stress					
2.20	You are willing to teach a student with Irlen Syndrome/ Visual Stress.					

1. In your opinion, what are some barriers to inclusion in your school ?

2. Which learning difficulty is easier to cater for in a regular classroom(Autism or Irlen Syndrome)? Why?

Appendix 2 (Reflective Responses)

Teacher`s Reflective Responses	
<p>Even though your participation in this research will take some of your valued time, your contribution and support will be greatly appreciated. By expressing your beliefs and perceptions, you will be making a meaningful contribution toward the knowledge base for improving the inclusive services and identifying barriers in inclusion concept application.</p> <p>As a reminder, your contribution is voluntary, anonymous, and confidential. No person, and no school will be identified in any written research documents or publications related to this research.</p> <p>This reflective response contains two parts. The second part has ten questions which need elaboration.</p> <p>I am aware that writing your reflection might take some time so please try to email your reflection before 1/12/2018 to : taghreed_hamdan@yahoo.com</p>	
<p>على الرغم من أن مشاركتك في هذا البحث ستأخذ بعضًا من وقتك ، فإن مساهمتك ودعمك سيكون موضع تقدير كبير . من خلال التعبير عن معتقداتك وتصوراتك ، ستقدم مساهمة مجدية في تعزيز قاعدة المعرفة من أجل تحسين خدمات الدمج وتحديد الأسباب التي تعيق التطبيق العملي لمفهوم الدمج للتذكير ، فإن مساهمتك طوعية و هويتك ستكون مجهولة وسريّة. لن يتم تحديد اسم الشخص أو المدرسة في أي من المستندات ذات الصلة بهذا البحث.</p> <p>تحتوي أداة البحث على قسمين. القسم الثاني يتكون من عشرة أسئلة تحتاج إلى شرح تفصيلي</p> <p>الرجاء إرسال إجاباتك على الإيميل أدناه قبل تاريخ 2018 / 12/1</p> <p>taghreed_hamdan@yahoo.com</p>	
Part 1 (Teacher Information)	الجزء 1 (معلومات عن المعلم)
a) Years of experience:	أ. سنوات الخبرة:
b) Current role/ subject:	ب. الصف الذي تدرسه حاليا / المادة:
c) Cycle:	ج. الحلقة:
d) I am teaching a student with :

Autism and/ or Irlen syndrome (visual stress)	د. أنا أدرس طالب يعاني من : مرض التوحد أو / و متلازمة إيرلين (الإجهاد البصري)
Part 2 (Personal experience) الجزء 2 (التجربة الشخصية)	
Based on your previous answer to question (d) 1. Do you have any previous background about this/ these cases (Autism/ Irlen Syndrome)? (Yes, No)	بناءً على إجابتك السابقة على السؤال (د) 1. هل لديك أي خلفية سابقة عن هذه الحالات أو إحداها (مرض التوحد / متلازمة إيرلين)؟ (نعم , لا)
a. If your answer is 'yes', how did you learn about it?	أ. إذا كانت إجابتك "نعم" ، كيف عرفت عنها؟
b. If your answer is ' No', what did you do to educate yourself?	ب. إذا كانت إجابتك "لا" ، ماذا فعلت لتثقيف نفسك عن هذه الحالة؟
2. Please reflect on your experience teaching this particular SEN student in your class over the course of the first term or last year.	2. يرجى الكتابة عن تجربتك في دمج هذا الطالب في صفك خلال الفصل الدراسي الأول أو العام الماضي.
3. What were your biggest challenges and how did you overcome them?	3. ما هي أكبر التحديات المتعلقة بدمج هذا الطالب التي واجهتها؟ وكيف تخطيتها؟
4. What are some ways or intervention strategies you used to teach your student more inclusively?	4. ما هي أهم الطرق أو استراتيجيات التدخل التي استخدمتها لتعليم هذا الطالب بطريقة الدمج؟

<p>5. How do you assess your student's academic progress?</p>	<p>5. كيف تقيم التطور الأكاديمي لهذا الطالب؟</p>
<p>6. What type of support that helped you to meet your SEN student's needs?</p> <p>7. What other type of support you think would help you to teach him/ her more inclusively? (Please elaborate)</p>	<p>6. ما نوع الدعم الذي تلقيته لمساعدتك في تلبية احتياجات هذا الطالب؟</p> <p>7. ما نوع الدعم الأخر الذي تعتقد / تعتقدن أنه سيساعدك على التدريس بطريقة الدمج بشكل أفضل؟ (يرجى التوضيح)</p>
<p>8. Have your views of inclusion changed after this experience ? How?</p>	<p>8. هل تغيرت نظرتك للدمج بعد هذه التجربة؟ كيف؟</p>
<p>9. Do you think that the statement " No child is left behind" is effectively implemented? Why?</p>	<p>9. هل تعتقد / تعتقدن أن عبارة " التعليم حق لجميع الطلاب" مطبقة بطريقة فعالة؟ لماذا</p>
<p>10. Please feel free to provide any further suggestions or comments that you feel would strengthen the validity of this research in the following section:</p> <p>Comments/Suggestions:</p>	<p>10. الرجاء أن لا تتردد / تترددى بإضافة أي اقتراح أو تعليق قد يسهم في تعزيز البحث.</p> <p>تعليقات و اقتراحات:</p>

Appendix 3: (Reflective Responses Matrix – Q1-3)

School	Years of experience	Current role / subject:	I am teaching a student with :	Q1. Do you have any previous background about this/ these cases ?	Q1a. If your answer is 'yes', how did you learn about it?	Q1b/ If your answer is 'No', what did you do to educate yourself?	Q2. Reflect on your experience teaching this particular SEN student in your class over the course of the first term or last year.	Q3. What were your biggest challenges and how did you overcome them?
A1	14 years	Grades 4,5	Autism	yes	university	-	-The student sits next to her classmates. -Eye contact -Welcoming her Once she was able to point at the pronouns on the board and was greeted by the students - provide an activity suitable for her ability such as puzzles, matching pictures with words, and coloring in order to make her feel that she is part of class while her colleagues are working collectively.	Student's Lack of awareness and lack of visual communication and the most difficult challenge is the disruptive voices during the lesson. In this case, she puts headphones to listen to her favorite music or sending her out of class for a break
A2	3 years	Grades 5.6	Both	yes	University, Interaction with students in class	-	For students with autism, integration into the classroom may be more difficult than a student with Irlen syndrome, but the integration of this type of student creates a different popularity in the school environment and thus brings fruit after a period of time. The ASD student attends the class with other student twice a week. She is able to recite and memorize <u>sourat Al ekhlasi</u>	-involving the ASD in group work activities was hard because what they learn is different than hers. And due to her disruptive behavior like screaming or destroying materials used. MIS student wasn't able to collaborate with classmates or perform the tasks quietly, gradually she started to cooperate with students in her group
B1	7 years	Grade 2	Autism	yes	Reading by google. Some workshops in my school.	-	She is a student with autism who has 7 years old. I think, as her classroom teacher, it is very important to be integrated with normal students. She got a lot of benefits from her classmates how to socialize and to imitate the good behavior but I think without her shadow teacher, she will affect her friends' attention by doing some sounds, her shadow teacher helps me to keep her fully concentrated.	The biggest challenge was her attention Deficit and moving in the class without target. I solved this issue by bringing her a shadow teacher to guide her and helping her to focus and improve her behavior and how to train her to follow the rules by guiding of me. (Her parents cooperation is appreciated in this issue too. Her parents are open minded and they can accept the solutions.

B 2	18 years	Elementary	MIS	NO	-	I have a coordination with the school's SEN student's supervisors. They always guide personally or through PD workshops that teach how to support these students academically during classroom situation, how to involve him in an activity, and how to design their assessments.	It was challenging at first without proper teacher training for SEN students. I have always used a green color pen either smart pen or regular white board maker, green color paper for worksheets and assessment for him. I always try to accommodate him to wear hats with dark under brims in the classroom, to find a seating position where the lighting conditions make it easier and more comfortable to read and work, as well as his math textbook positioned away from direct light which helps reduces the glare from the bright lighting. This limited his amount of work done. I also give him extra time to complete his work due to his slow writing speed. Sometimes, I reteach him a lesson in my free time to accommodate his learning level with common core standard.	-Poor attention and concentration. Solution: limited amount of work, one to one extra coaching. -The classroom is a very stressful environment. Solution: Allow student to sit near his friends to feel comfortable. -Copy activity, worksheets and assignments on colored paper. Solution: Personally arranged required green color paper.
B 3	9 years	Grade 4	MIS	I know about autism but not MIS	I knew about autism through my postgraduate studies and my knowledge gained through social media and lectures	-	This experience led to the integration of the student with the rest of the students and led to increased self-confidence and improved social relations with others	Sometimes the student is distracted and does not know the tasks required of him specifically This problem has been overcome by the student cooperation program, where each student helps others after finishing the application
C 1	8 years	Primary and secondary	Both	yes	I have done many courses to support people with special needs such as Autism - Epilepsy - Irlen syndrome - Dyslexia, Dysgraphia and Dyscalculia.	-	At the beginning of the year I did a baseline assessment for the student and I highlighted her weak points, after that, I made a special program to support her and I achieved my goal at the end of the year	Autism and Irlen syndrome Students needs quiet place to study and concentrate and they needs different tasks and goals from other students.

C 2	14 years	Secondary	Autism	yes	From student that I am still teaching him	-	The student finds it difficult to adapt to the educational process in the classroom in terms of participation and completion of the activities required of him, taking twice the time to finish one activity and also does not like to read to his colleagues and when I ask him anything that answers me in English that he does not know and I do the so-called individual differences and reduce the required material and also at the beginning of the academic year in the first test of the questions are in Arabic and the answers are mostly in Arabic, some in English and the rest of the tests in Arabic with the help of the translator	Completion of classroom activities Writing tests Participation and interaction with students. I overcame it by multiple plans, activities and tests should be made for him, in addition to his integration into groups of one student or two student during class activities
C 3	20 years	Secondary	Autism	yes	I was working with a voluntary organization so we visited Dubai Autism center and started research work on it.	-	The child has different areas of learning difficulties but sometimes he speaks very well. Sometimes he has mood swings and does not want to work at all. It's difficult for him to understand the long sentences or subjective works so work is always simplified for him and is broken into parts to understand.	Attention span as child finds it hard to focus or concentrate or attentive do different strategies are used for inclusion.
E 1	6 years	High	MIS	yes	From the SEN department in many schools I have worked	-	Engage this student in the classroom was a bit challenge to me, so I design some lessons to meet his level and use multiple resources (online) to make the lesson easier for him.	The big challenge was engage the student with his classmates. I always encouraged him to participate in the lessons work either in groups or by pairs.
E 2	5 years	Homeroom 3-5	Autism	no	-	I spoke to the SEND Department in my school, read articles about it and had meetings with the student's parents.	The student experienced no difficulty settling in the class. He has good social skills and is usually attentive during class. Short sessions for every lesson and constant recalling were useful strategies.	The curriculum for my student was vast. Therefore, along with the SEND Department, the curriculum was modified. To ensure that my student has understood what I was teaching, we had regular one on one session for a few minutes every lesson where I explained him the lesson again.

E 3	12 years	-	MIS	yes	Teachers were made aware of the student by the parent. She had provided us with the doctor report.	-	He was very restless in class. Quiet often left his glasses at home. It was not easy getting his attention to finish his work.	Biggest challenge was to make him understand Mathematical concept. If he didn't understand quickly, he won't then pay attention in class. So I would sometimes keep him in break , to explain separately. He would do his assessment in a separate room.
E 4	9 years	Grade 9	MIS	No	-	I visited SEND (Inclusion) department and get basic information about the students' situation and difficulties. I also searched the internet to get further information which definitely helped me.	The student gets angry very quickly and argues with the teacher and other students and sometimes refuses to cooperate.	The student gets angry very quickly and argues with the teacher and other students and sometimes refuses to cooperate. I tried to get help from the supervisors. However I tried to tolerate his behaviors due to his difficulty with processing visual information. He easily gets distracted because of Irlen syndrome.
E 5	9 years	Grade 9	Autism	no	-	I visited SEND (Inclusion) department and get basic information about the students' situation and difficulties. I also got feedback from shadow teacher and tried to meet the requirements of (Autistic) the student.	Generally speaking the student is very respectful, most of the time eager to learn. He has some difficulty with critical thinking questions.	When we were discussing about critical thinking questions he told that he did not understand and I tried to explain by trying to simplify the subject. He also sometimes complains about the noise level in the classroom which makes me sorry for him. However, when I deal with him some students consider that situation as an opportunity to chat with classmates. I cannot allocate enough time to him due to this reason. There are two more SEND students one with Irlen syndrome and one with general learning difficulties. When I have other students who are also hyper in the same section, I am not satisfied with the time I allocate for SEND students.

(Reflective Responses Matrix – Q4-9)

S c h o o l	Q4. What are some ways or intervention strategies you used to teach your student more inclusively?	Q5. How do you assess your student's academic progress?	Q6. What type of support that helped you to meet your SEN student's needs?	Q7. What other type of support you think would help you to teach him/her more inclusively? (Please elaborate)	Q8. Have your views of inclusion changed after this experience ? How?	Q9. Do you think that the statement " No child is left behind" is effectively implemented? Why?	Q10.  Comments /Suggestions:
A 1	Coloring pictures	Slow progress	Shadow teacher	The presence of a special teacher for the student alone	I have not changed I find it difficult to include SEN students	Often due to lack of time the need to follow the curriculum a large number tight time.	-
A 2	Learning by play, simulation, collaborative learning, using images and videos	Slight improvement	Support of the person in charge of these cases	I think that I need more support for each case for each individual student because not everyone who suffers from autism has the same behaviors and habits. It is different even Erlene. Every student suffering from this disease has a situation that is less than the second. I feel that I need support for the status of each student. Ways and means to help develop their level	Yes, integration gives the student to be more social and gives him the ability and confidence in dealing with others without hesitation and fear	Not for everyone, as its hard for some people to reconcile different student qualities at once	-
B 1	Keeping her to do a group work with her friends and to be a leader sometimes. I let her to speak everyday about her feelings and to act as a little teacher in the class in front of her friends.	I touched big academic progress especially in mathematics but she still struggling in the Reading skill . Her tests should be modified and I have given her more time to finish her tasks .	Her parents are super cooperate .Her shadow teacher is do clever how to help her to let her focus .	I think ,I need special support from the school by making a special program and some workshops and training for those teachers Who have those kind of students.	Yes, before I thought that students with special needs need to be separate but after this experience I am sure they must be integrated but with some conditions such as a shadow teacher, school and parents help and teacher understanding of the case	No, not yet .Because there is no effective help by the school and special program in the schools for those students.	-

B 2	<p>-Provided more visual aids</p> <p>-Seated close to the teachers</p> <p>-Seated close to the smart board with an angle that will not increase the stress on his eye</p> <p>-Used required color paper</p>	<p>Accommodates all required common standards with limited amount of questions, a variety of questions like <u>MCQs</u>: easy reasoning question but less direct and higher order thinking sums.</p>	<p>-Special visual aids with required green color</p> <p>-SEN students, teacher training workshop with SENCO, social workers, and HOD's support.</p>	<p>-A shadow teacher with the student because he is the only Sen student in the class.</p> <p>-More MOE supports to train teachers.</p> <p>-Inside school special extracurricular activities for students.</p> <p>Parents' support</p>	<p>Yes, I can accommodate such students with different teaching techniques such as making them comfortable in peer learning, group activities, and less exposure to smart boards by using hands on activities</p>	<p>I Strongly believe in that statement " No child is left behind". It's a team work of an educator, SENCO, social worker with proper regular instructions, suitable staffing, accommodation, modified curriculum, standardized assessment for Irlen students will show a significant improvement which will prove that no child is left behind in learning.</p>	-
B 3	<p>At first the approach is to take account of individual differences</p> <p>As an example of this student rather than the task required of him is to express in writing on a particular subject is asked to express the drawing, for example, and so on</p>	<p>In fact, I notice very little academic development</p>	<p>Permanent communication with the psychologist and also with the social worker</p> <p>Two meetings were held with the mandate of the Order during this chapter</p> <p>And discuss the situation of the student with them and the tasks required of him and the procedures that must be followed to improve the level of the student</p>	-	<p>No because I believe in inclusion from the beginning</p>	<p>No . Because of the large numbers in class and up to 30 students, which makes the teacher distracted between the needs of each student</p>	-
C 1	<p>SRA - Touch Typing</p> <p>- Manga high - worksheets.</p>	<p>Excellent.</p>	<p>I had big support from the teachers (differentiation in the class) and social support from the parents.</p>	<p>make special curriculum for them</p> <p>2 - design more classes to support them.</p> <p>3 - let them feel they are normal and just they needs different ways of teaching.</p> <p>4 - make courses for the teachers.</p> <p>5 - support the schools with resources.</p>	<p>Sure, because every child is different and he/she needs different ways of teaching to achieve their goals.</p>	<p>No because not all the schools likes to have students with special needs.</p>	-

C 2	Differentiation and activities suitable to his abilities. To have criteria suited to the capabilities of the student Sending positive messages about the ability to get a better result each time and clarify what is the next step Having an assistant teacher with the student to convince the student that I have direct contact with the guardian and that I will photograph the book or the exam and send it to the father to do the work required of him	Class tests Participation and interaction Completion of activities	Training courses from the learning difficulties section of my school and reading from different educational sites	How to do more appropriate activities for this type of students. The type of questions to be given for the student How to encourage students to work more diverse activities Raise the challenge ceiling	Yeah Every student, regardless of the difficulties, is entitled to deal with and learn with all types of students so that the student can meet the challenges in the future	This term is true but is not strictly applied for the following reasons: 1. The culture of the teacher and the extent of their awareness of the importance of dealing with this type of students 2 - the number of learners within the classroom 3 - Lack of knowledge of teachers to the levels of students and their abilities 4 - lack of experience with teachers on how to deal with them	-
C 3	Small questions Visual help Pictures with words Letters to symbolize Less writing ICT help	An inclusive assessment One to one sessions Work done	Different resources like pictures, videos, drawings	A one to one session Link department's help Presentations Simplifying the work.	Yes, as in beginning it was only with worksheets but now it meant a lot.	If each child will be catered according to his needs, no child will be left behind.	Early detection of the level of autism will help to find out areas of concern and can be sought out with the help of the specialists.
E 1	Use various resources (online), one to one teaching.	He made an acceptable progress.	I actually did not receive any support from anyone.	They have to tell us what is the best way to deal with such these cases through workshops, meeting, ...	Yes, we can improve the achievements to these students in many ways.	I don't think so. as the ratio of the teacher students is high comparing to the other schools.	I suggest to have a specialist in the class with the students. It can be once a week or twice so he/she can track the performance of the student and work in parallel with the teacher.

E 2	Assign a buddy Paired activities Being part of a group during class activities Encouraging participation in class discussions	Short questions after every lesson that were usually multiple choices or matching. Regular reading sessions to monitor reading fluency. Regular formatives and summative exams that were modified.	Meetings with the concerned student's parents and Learning Support Assistant.	-	I understood the importance of inclusion in the classroom. By teaching my student, I was able to apply my teaching expertise in a better way in order to maintain an inclusive learning environment.	Yes. I believe that every child has different needs and a right to equality, be it special or otherwise. Our school aims to work on this principle and strives towards making every child successful.	-
E 3	Teaching him separately helped a bit.	His academic progress was slow. Science he was better. English very weak and math on boarder.	RTI department helped in this. As students studied small group.	A support at home meaning doing homework should help. Special reading classes would have helped.	-	" e was doing By the end of the year there was progress. He was doing his assessments a bit more independently."	-
E 4	Whenever I have chance to go to his desk, I try to explain to him and encourage him to solve the worksheet and participate.	I ask him questions to understand if he understood the topic. He also takes differentiated exams with other students	Knowing basic information about Irlen syndrome and discussing with SEND department.	I think all teachers who teach to him and other SEND students need PD sessions at least once in every two weeks.	Yes, this experience taught me that every student has potential. It is possible to reach their full potential through effective and differentiated education.	For some it may sound to be a utopia. However we have more means and opportunity to educate children effectively according to their special needs.	-
E 5	Whenever I have chance to go to his desk, I try to explain to him and his shadow teacher. I also get feedback regularly from his shadow teacher I also get feedback regularly from his shadow teacher.	I ask him questions to understand if he understood the topic. He also takes differentiated exams with other students.	Knowing basic information about Autism and discussing with his shadow teacher.	I think all teachers who teach to him and other SEND students need PD sessions at least once in every two weeks.	Yes, this experience taught me that every student has potential. It is possible to reach their full potential through effective and differentiated education.	For some it may sound to be a utopia. However we have more means and opportunity to educate children effectively according to their special needs.	-

Appendix 4 (SPSS analysis of ASD survey questions)

Questions		N	Σ Agreed %	Mean	Std. Deviation
Awareness	1.1 Autism is a neurological disorder.	115	70.50%	3.71	0.846
	1.2 ASD is more common in boys than in girls.	116	47.50%	3.51	0.89
	1.4 ASD students are engaged in repetitive and restricted behavior.	115	62.60%	3.58	1.009
	1.5 ASD students have social and communication impairments.	115	70.40%	3.89	0.814
	1.6 ASD students are literal, do not understand figurative language.	116	57.80%	3.59	0.924
	1.9 ASD students need more time to process spoken language.	114	65.80%	3.76	0.845
	1.10 Stimulations such as sounds, smells, textures, and lights might cause tantrums or meltdowns	116	70.70%	3.86	0.884
	1.11 They are visual learners	113	60.20%	3.67	0.968
	Total	117	63.10%	3.70	0.494
	Readline SS	1.12 ASD students benefit from routine and reminders	116	83.60%	4.17

Readiness	1.12 ASD students benefit from routine and reminders before transitions.	116	83.60%	4.17	0.714
	1.13 Teaching ASD students requires emotional and physical effort than other students.	117	80.40%	4.15	0.922
	1.14 They are capable of learning.	117	94.00%	4.49	0.61
	1.15 ASD students need to be educated in special classes by special education teachers.	114	50.00%	3.38	1.258
	1.16 A shadow teacher is important to include an ASD student in a regular class.	116	62.00%	3.71	1.119
	1.17 Assessment accommodation could be small-group or private testing.	115	85.20%	4.08	0.664
	1.18 You have an understanding of the autism spectrum.	116	64.60%	3.69	0.817
	1.19 You can teach an ASD student.	117	49.60%	3.45	0.905
	1.20 You are willing to teach	117	57.30%	3.64	0.866

	an ASD student.				
	Total	117	69.70%	3.86	0.394
Misconceptions	1.3 ASD students always have high IQ and do well in Mathematics.	117	36.80%	2.95	1.217
	1.7 ASD students always have learning difficulties.	115	38.30%	3.03	0.999
	1.8 The comprehension difficulties demonstrated by ASD students is a result of cognitive deficit	117	49.50%	3.32	0.934
	Total	117	41.50%	3.10	0.805
Overall total		117	62.80%	3.68	0.387

Appendix 5 (SPSS analysis of MIS survey questions)

Descriptive analysis for each question Meares Irlen Syndrome					
Questions		N	Σ Agreed %	Mean	Std. Deviation
Awareness	2.1 It is a neurological condition causing an over-active brain.	112	41.10%	3.35	0.681
	2.2 Some of the symptoms are eye strain, headache, migraines, and text distortion.	113	61.10%	3.73	0.71
	2.3 Students with Irlen syndrome are not aware of their visual impairment.	110	38.10%	3.26	0.762
	2.4 Students with Irlen syndrome are sensitive to bright light, fluorescent lighting , and glare.	112	58.00%	3.71	0.68
	2.5 Students with Irlen syndrome are sensitive to black and white contrast of printed books and papers.	113	47.80%	3.5	0.696
	2.9 This syndrome causes reading difficulty and poor reading comprehension.	111	58.50%	3.68	0.753

	2.10 It affects math computation, handwriting, copying, and even listening.	112	45.60%	3.42	0.731
	2.11 A gifted and talented student can have Irlen Syndrome.	112	54.50%	3.67	0.764
	2.14 A student with Irlen syndrome can have dyslexia.	112	45.60%	3.46	0.656
	2.18 This difficulty causes behavioral issues and/ or lack of motivation in class.	112	48.20%	3.5	0.747
	Total	113	49.90%	3.53	0.418
Readiness	2.13 An accommodation would be the use of natural light and / or caps and visors in class.	109	53.30%	3.58	0.698
	2.15 The effects of this syndrome are easy to cater for in a regular classroom.	112	36.70%	3.24	0.883
	2.17 Changing documents format is one type of accommodation.	111	61.20%	3.69	0.748
	2.19 You can teach a student with Irlen	109	47.70%	3.49	0.846

	syndrome/ visual stress				
	2.20 You are willing to teach a student with Irlen Syndrome/ Visual Stress.	113	47.80%	3.5	0.867
	Total	113	49.30%	3.50	0.582
Misconceptions	2.6 A thorough examination by an ophthalmologist / optician can assess this case.	111	43.20%	3.38	0.821
	2.7 It can be treated by regular eye glasses.	113	9.80%	2.65	0.844
	2.8 Students with Irlen syndrome have learning difficulties because of their low intellectual capacity.	113	17.70%	2.72	0.911
	2.12 Reading speed, accuracy and comprehension always improve by using overlays or tinted eye glasses.	112	45.50%	3.53	0.71
	2.16 Improving students' phonological awareness always help to overcome this problem.	110	32.70%	3.24	0.703
	Total	113	29.70%	3.10	0.480
	Overall total	113	44.70%	3.41	0.352

Appendix 6 (A sample of a student's` quest in school C)

Note: The upper part of the document was removed to maintain anonymity



On File: Ed Psych, Medical, Internal Assessments, Counsellor

Strengths: Climbing, javelin, art, developing sense of humour

Challenges: Behaviour, literalness, motivation, homework, verbal comprehension

Provision: In class support, behaviour monitoring, HL Club, MFL withdrawal

Social: Needs support and calm constant reminders to keep motivated. Can distract peers

Exam Access Arrangements

25% Exam provision (50% for English language)

Laptop, Reader, Room, Prompt

Top Tips for Teachers – Pupil Voice

- A. I am able. Push and encourage me to fulfill my potential.
- B. Give me clear directions to write down keywords / important information
- C. Pair me with a well behaved, higher level, motivated students
- D. Please alert Mrs Walker/Mrs Dawson to any problems - do NOT contact parents directly
- E. Do not accept 'I'm not sure' as an answer - reply with 'yes you do' and give a second chance for reply (as long as you know that he knows!)
- F. I need 2 clear verbal warnings if I am not following instructions, 3rd warning is to inform LInK for follow up discipline
- G. I can use LInK time to complete essential work - I don't complete work at home